THE DOCK & HARBOUR AUTHORITY

No. 139. Vol. XII. MAY, 1932

Editorial.

The Harbour of Dundee.

Situated on the Firth of Tay, Dundee is an easily-accessible harbour and of the ports situated on the East Coast of Scotland it is probably the most suitable as a harbour of refuge in times of bad weather.

As early as the year 1040 records can be traced of ships using Dundee as a harbour of refuge, although the first intimation of Dundee being used for the shipment of goods was in 1225 when it was the port of arrival for all merchandise arriving in Scotland.

The gradual development of the harbour can be traced through the centuries, and in 1830 a Harbour Trust was formed to take over and control the harbour, as it had been allowed to get into a bad state or repair and was not efficient to cope with the steadily-increasing trade.

The principal import into Dundee is jute and the importation of this product commenced as early as 1824, but, of course, on a very small scale. In 1838 the total quantity of raw jute imported was 1,136 tons, whereas the annual importation now is 240,000 tons.

The latest development that the Trust have undertaken is the extension of the King George V. Wharf. The work was first commenced on this wharf in 1913 and the first section completed by 1915. The war naturally brought about a stoppage and the second section of the wharf was not commenced until 1924 and completed in 1926.

The Trustees have now entered upon a third extension of the wharf, which will give a further length of about 560-ft.

An illustrated article on the Harbour of Dundee appears on another page and also forms the supplement for this month.

New Ship Canal Works.

It is expected that the new dock of the Manchester Ship Canal Company, at Stanlow, will be ready for use in the early autumn. The smaller contracts for equipment have already been placed. The dock at Stanlow is designed to cope with the growing oil traffic there, which has become so considerable that the present dock, opened in 1922, is of an insufficient size to deal with the importation and distribution of the spirit. The new work, which will increase at least threefold the volume of petroleum spirit which can now be dealt with, is well on the way to completion. Nearly all the excavation for the dock has been done and the concrete jetties are finished.

Concerning the new wharf at Irlam for the unloading of iron ore to the reconstructed works of the Lancashire Steel Corporation, this is so far completed that small vessels can actually come alongside at one end, and the remainder of the barrier between the wharf and deep water is rapidly disappearing. The new ore bridge for the unloading of ships, having a span of 200-ft., will be the largest of its kind in the country.

Details of the New Graving Dock at Southampton.

Details of the fittings of the Southern Railway Company's new graving dock at Millbrook, Southampton, have just been made public by Mr. F. E. Wentworth-Sheilds, O.B.E., M.Inst.C.E., the docks engineer.

The dock, which will be 1,200-ft. in length, 135-ft. wide at entrance, and will have a depth of 45-ft. of water over the block at any high tide, will be closed by a sliding caisson. The question of dividing the dock into two parts by an intermediate caisson has been considered, but the Southern Railway Company came to the conclusion that the additional expense was not worth while, for the reason that it was rarely possible to dock two ships to enter and leave together.

To empty the dock 250,000 tons of water will have to be expelled from it. The pumping arrangements are such that the dock will be emptied in four hours by means of four 54-in. centrifugal pumps driven by electrical motors developing 1,250 b.h.p. in each instance. They will be so installed that it will be possible to operate them on a second graving dock which may be built alongside at some future date.

The dock will be novel in that the altars so common in graving docks will be done away with. There will be only one in this case. The dock is not being built with upright walls, but with battered walls, which will not only allow of extra light for work on the bottoms of ships, but will permit the paint to dry more readily. In order that the battered walls may not be an anxiety to shipmasters, buttresses are being built at intervals of 200-ft.

The keel blocks will be 4-ft. 6-in. above the floor, so as to give ample space for work to be done under the ship. There will be an electrically driven travelling crane on one side capable of lifting 50 tons, and an auxiliary lift for smaller weights. There will also be a 10-ton electric crane.

The approach channel to the graving dock will be the same as that serving the one-and-a-half miles of new quays, and will be 600-ft. in width and 35-ft. deep at l.w.o.s.t. Outside the graving dock will be a turning basin about 1,500-ft. in width.

In order that the dock may, if desired, be used as a wet dock, a site has been reserved on one side for a shed for cargo and passengers.

Deep Water Quay and Wet Dock for Colombo.

The desirability of constructing a deep water quay in the Port of Colombo has been mooted since 1906, and the advisability of making a start has been repeatedly urged by the port authorities, who now again press for the sanction to set about the preparation of plans.

Although these plans will not involve much expenditure, they will, however, take a considerable time in being prepared. Once ready, they will be submitted to Government for approval.

The deep water quay, which will cost over a million rupees, is considered an absolute necessity for Colombo—one of the principal ports of the world and one of the few, in view of its importance, which is without such a quay.

Ships calling at Colombo to be refuelled, oil tankers, and other ships are now berthed alongside the Guide Pier. This is not only dangerous, but is also a very inconvient procedure, as the passage to the graving dock is blocked and ships by the pier have to be moved to enable ships to go in and out of the dock.

In addition to the scheme for the construction of a deep water quay there is another which is equally important—the construction of a wet dock for Colombo.

The port authorities have pointed out that Colombo is one of the few ports in the world that is without a wet dock, an essential in view of the growing importance of the port.

A wet dock is particularly required for petrol ships which now discharge at the Guide Pier. If these ships were berthed in a wet dock and thus shut off from the rest of the harbour it would result in danger being minimised.

Great risks are now being run by petrol ships and other tankers discharging at the Guide Pier, and in the event of a fire breaking out there is no way of isolation from the rest of the harbour.

The importance of constructing a wet dock has from time to time been urged by the port authorities, who now urge Government to consider the matter with that of constructing a deep-water quay.

Improvements and Extensions at Inverness Harbour.

Reports by the engineers on the progress of the scheme of improvements and extensions at Inverness Harbour have been considered and approved of by the local Harbour Trust. At the meeting at which this resolution was reached it was also agreed that, in view of the difficulty experienced in obtaining a proper foundation for the retaining piles for the North Quay, the plan should be altered and the North Quay constructed on the same design as the Central Quay. The engineers were instructed to submit a plan and estimate of the cost of a scheme to ensure, on the completion of the dredging, that the work had been done satisfactorily, leaving a smooth bottom in the harbour.

Notes from the North

Quiet Trade at Railway Dock.

OWING to quiet trade at the L.M.S. Docks, Garston, the company, fearing it might have to dismiss a number of their employees, chiefly in the hydraulic department, arranged a series of conferences between the men's union delegates and the company. These have resulted in the men agreeing to take one week off in four in order to ease the situation and avoid dismissal. About 100 men are involved.

Fleetwood Lighthouses.

Owing to the failure of the electric light supply, the lights of three lighthouses—two on land and one three miles out at sea—were extinguished at Fleetwood recently. Emergency oil lamps were quickly brought into use by the keepers, and the lighthouses were only in darkness a few minutes. A large section of the harbour lighting also suffered, but there was no mishap, although a large number of steam trawlers were entering the port with Easter fish at the time.

The Port of Liverpool.

In Liverpool commercial circles there has been discussion lately as to the Customs limits of the port of Liverpool. The Customs authorities in London, in 1658, stated for the guidance of their officers at Liverpool and Chester that Liverpool's jurisdiction extended along both sides of the Mersey from the Redstones in Wirral to Sankey Bridges. In 1833 the Town Clerk of Liverpool stated in evidence before the Municipal Commissioners that the Port of Liverpool embraced all the coast-line from Hilbre to the Ribble. The present Customs limits are from the Redstones, along the Cheshire shore, to Ince Ferry; and from Dungeon Point, near Hale, along the Lancashire coast, to Formby Point.

Personal.

Capt. Edward Greenwood, harbour master at Barrow-in-Furness, died recently after a short illness. Captain Greenwood came to Barrow in 1925 from Fleetwood, and was appointed harbour master in that year. He was a native of Glasson Dock and served his apprenticeship on sailing vessels. After obtaining his certificates he was engaged on the Lamport and Holt and the Hall lines of steamships, and later on the Fleetwood to Belfast mail L.M.S. steamers.

* * * *

Commander G. H. Barnish, D.S.O., R.D., R.N.R., has been appointed Assistant Marine Superintendent and Harbour Master at Heysham. He was fourth officer on the liner " Carpathia " and helped in the rescue of the survivors of the " Titanic " disaster, and during the war was awarded the D.S.O. for ramming and sinking a German submarine while in command of a destroyer.

Fleetwood Dock Improvement Scheme.

" Why is the Fleetwood Dock improvement scheme, first mooted sixteen months ago by the London, Midland and Scottish Railway Company, being held up? " This question has been asked many times in Fleetwood in recent weeks, and now the Council has been persuaded to make an official inquiry. Fears have been expressed in the Fleetwood fishing industry that the scheme, which is estimated to cost £750,000, has been abandoned.

Councillor Harry Blackburn, ex-president of the Fleetwood Fishing Vessel Owners' Association, states the new dock was essential for continued activity in the local fishing industry. He was tempted to ask whether the railway company were justified in undertaking a huge project at Fleetwood, but when the present fish dock was built the same question was asked. Many doubts existed at that time, but since then Fleetwood had attained the position of being the third largest fishing port in England, a position achieved in 25 years. Landings of fish and the amount of coal dealt with by trawlers during the first three months of this year constituted a record. There were disabilities attendant on the present docks which caused unnecessary expenditure and irritating delays, and everybody connected with the port was anxious to see vessels enter or leave at any state of the tide. He thought the Council would be justified in suggesting to the railway company that the new dock was worthy of continued consideration. Should they proceed with the dock, they would never regret it.

Recently a deputation met two vice-presidents of the L.M.S. Railway Company. Whilst it was not a very optimistic meeting, there was a feeling that the fishing industry would right itself again in the future. The trawler owners are subject to certain disabilities at the present docks, which they are anxious to have brought up to date, especially as the L.N.E.R. are building a new fish dock at Grimsby.

Ribble Dock Undertaking.

Speaking at the Preston Town Council, Alderman Astley Bell, chairman of the Finance Committee, said the good influx of trade at the Ribble Dock in the past three months had assured them that the yearly debt would be within the rate grant of £35,000, but the total debt on the undertaking was £1,142,000, the annual loan charges being £86,500.

Morecambe Old Harbour Site.

Representatives of Morecambe Corporation Old Harbour Committee have interviewed officers of the Ministry of Health upon the question of the appropriation of the old harbour site, now that it has been purchased by the Corporation. They asked the Ministry to indicate so far as is possible its attitude to the utilisation of this land, in accordance with plans which the Corporation intend to submit to the Ministry for approval. This course was taken so as to avoid any possible unproductive expenditure of money in the preparation of schemes and plans. It is the intention of the Council to obtain from the architects alternative schemes for the comprehensive development of the land progressively, and to make a start within the next twelve months.

Fleetwood's Golden Gravel.

Fleetwood's foreshore deposits of gravel continue to yield an excellent revenue to the Council. The profit from last year's sales amounted to £7,983. Of this amount, £1,050 has been spent on providing a weighbridge and screen plant, leaving £6,933, which, together with the balance brought forward of £7,423 has been expended on capital works. During the past three years the Council has spent £36,500 of the profits derived from the sale of gravel on capital works. During the past 10 years over a million pounds has been spent in developing the district. Amongst the more important works has been the erection and strengthening of the sea wall for the safety of the town.

Death of a Noted Dock Engineer.

Mr. John Newell, who died at Bootle recently, at the age of 91, came to Merseyside about 68 years ago, and with the late Mr. Thomas Monk founded the firm of Monk and Newell, constructional engineers, of which he had been principal since 1899. In conjunction with Mr. G. F. Lyster, the former engineer to the Dock Board, the firm constructed several Liverpool docks, including the Canada Graving Dock, built in 1897-98 in record time to accommodate the new White Star liner " Oceanic." They also built the Alexandra Dock. Mr. Newell was prominently connected also with railway constructional work. His firm rebuilt the Exchange Station, Liverpool, converting it from the high level approached by steps in Tithebarn Street to the present road level. They were responsible for the laying of the line from Seacombe to Hawarden Bridge, and another stretch from Hindley and Pendleton to Manchester, thereby avoiding Wigan. They fulfilled many contracts for the L.M.S. His son, Mr. Thomas Newell, who died in January, was for some years engineer to the Mersey Docks and Harbour Board.

Liverpool Dock Railway.

Objections have been lodged with the Mersey Docks and Harbour Board and the Ministry of Transport by the Liverpool Cart and Motor Owners' Association against the application of the Board to amend their by-laws to permit them to increase the length of railway trains to 30 wagons along the line of Liverpool Docks. Liverpool Cart and Motor Owners' Association bases its objection on the inconvenience that would ensue to road users through longer trains blocking up the gateways giving access to the dock estate, for indefinite periods. The present legal limit for freight trains using the dock railway line is 18 wagons. Even under present conditions owners of motor wagons conveying goods to and from the docks experience considerable delay when trains are being marshalled and shunted. This trouble, it is feared, will be aggravated if the Dock Board succeed in their application.

At the Liverpool Chamber of Commerce, Mr. R. V. Edwards, chairman of the Transport Committee, said this was a matter which agitated the trade very considerably. Their contention was that a quarter of an hour to 20 minutes' hold up of traffic was too long. There should be some specific marshalling point. The trade would not mind longer trains if they moved quicker. The speed limit for the trains was four miles an hour. Mr. J. A. Irving, who is a member of the Liverpool Cart and Motor Owners' Association, said that the objection was that a large number of wagons were brought along and shunted at different docks, and if they had a train of thirty to forty wagons, three or four dock entrances would be blocked. That would mean a serious delay to goods traffic. The Transport Committee are inquiring into the position.

Notes from the North—continued

Caernarvon Harbour Trust.

At the last meeting of the Caernarvon Harbour Trust it was reported that 1,929 tons of slates had been shipped from the quay during February this year, an increase of 1,214 tons on the corresponding month last year. The total tonnage of slate shipped in the months of December, January and February was 6,179, as compared with 2,259 tons shipped during the corresponding three months in 1930-31.

The Port of Ulverston.

Ulverston, situated on the northern shores of Morecambe Bay, which was last used for shipping purposes in 1916, has once more become a "port," when the motor ship "Warita," of Chester, sailed up from Barrow to the pier of the North Lonsdale Iron and Steel Company to load up pig iron. The pier is only a few hundred yards from the foot of the canal, cut in 1793, that connects Ulverston with Morecambe Bay. Now the sands of Morecambe Bay have shifted and the channel is once more open for traffic.

Liverpool Firm's Plans for Irish Port.

Messrs. J. Morris and Co., of Liverpool, are promoting a scheme which includes the construction of new cattle lairages at Cork. At a meeting of the Cork Harbour Board the engineer reported that the plans had been already submitted to the Free State Department of Agriculture for approval. Mr. Mercier suggested that the Board should get the co-operation of the Great Southern Railway Co., as that would be a useful means of securing the success of the project. He also proposed that the company should be asked to extend the railway line up to the proposed cattle lairages. The railway company, by bringing trainloads of cattle from fairs, would benefit shipping. It was decided that the Board's engineer should discuss the project with the railway company's engineer.

Mersey Tunnel Progress Report.

The following occurs in the April Progress Report of the engineers to the Mersey Tunnel Joint Committee:—

"Contract No. 4 (construction of full-size tunnels on the Liverpool side). The tunnel work under this contract is complete; the concrete filling is complete; the concrete roadway is complete; the footpath construction has been completed; the number of men employed on this contract is about 80."

Under the river, where work is in progress on footpath construction, 5 per cent. of which remains to be done, only 70 men are employed. Other parts of the Progress Report provide an interesting comparison with the last monthly statement of the engineers. For instance, the tunnel work on the Birkenhead side has been completed with the exception of a short distance of footpath construction. On March 9th it was reported that 89 per cent. of the footpath had been completed and 95 men were employed. The last report (April 13th) says that 90 per cent. of the footpath has been completed and 95 men are still employed, while the estimated value of the work done has risen in the intervening five weeks from £766,000 to £768,000.

New Dredger for Liverpool.

Mersey Docks and Harbour Board has accepted the tender of Messrs. Cammell Laird and Co., Ltd., Birkenheard, for the construction of a sand pump hopper dredger of the same dimensions as the present dredgers "Coronation" and "Burbo," for £103,000. The new dredger will be of the following dimensions: Length b.p. 330-ft., beam 54-ft., and depth 22-ft. She will be fitted with eight pairs of hoppers, which will be capable of filling the vessel with 3,500 tons of sand in about 50 minutes; also two large sand pumps to suck up sand from a depth of about 70-ft. The main machinery, which will be fitted aft, will comprise twin-screw triple-expansion engines capable of giving the vessel a speed of about 11 knots. The vessel is to be built to Lloyd's highest class and the work will find employment for a large number of men for about nine or ten months, when it is expected the dredger will be ready for service.

Mr. C. Livingston, chairman of the Marine Committee, told the Board at one of the April meetings that the question of the purchase of a new sand pump dredger had been carefully considered by the Marine Committee, who had come to the conclusion that there was real need for the vessel, and that the present was an opportune time to order her. The "G. B. Crow" was now becoming old, and whilst repairs might be carried out which would keep her in commission for a few years, her ultimate replacement was necessary. The new vessel would be of approximately the same dimensions as the "Coronation" and "Burbo." It would be borne in mind that a vessel of that size was the most suitable for working in the Mersey channels. The tender of Messrs. Cammell Laird and Co. was considered to be a very reasonable one, and, apart from the fact that they were glad to encourage local trade, that company had already had experience in building sand pump dredgers for the Board, the "Leviathan" having been constructed at their yards.

Isle of Man Harbour Works.

Some of the harbourage and new constructional work at Isle of Man has been suspended for the summer months. On the Red Pier itself, construction has been delayed because of the retarding of the dredging. If the dredger had worked night and day throughout the last summer, probably the work would have been finished by now, but there was a desire on the part of the authorities to protect the ears of visitors from a nightly din, and now the dredger cannot leave until some time this summer—that is, if the weather lets her complete her work. The Isle of Man Harbour Board has laid down as much of the new structure as it can until a further area is made clear. The quantity of stuff remaining to be dredged is comparatively small.

A piece of walling 85-ft. long has been built to the north and 43-ft. has been built to the south, to a width of 15-ft. at the surface and 22-ft. at the bottom; the quite considerable space between these walls will afterwards be filled in with rubble. Although 43-ft. is the length at the surface, the wall is stepped down all the way, considerably increasing the length at the bottom, and beyond that is a foundation course for about 100-ft. The whole is 46-ft. high. No more building can take place until the dredger has finished her job. Meanwhile the cement blocks necessary for the next instalment will continue to be cast in the Board quarry close to the Battery Pier, and more ground is being cleared for storage.

The Harbour Board have practically completed their share of the widening of the Douglas Promenade, at the base of the Victoria Pier on its north side. The new outer wall has been designed to be in keeping with that on the south side, beyond the shelter for queueing passengers, so that if at some future time it is decided to erect a similar type of shelter on the pavement part of the widened area, the wall will be there ready. The Harbour Board are still in process of widening the pier on the south side between the shelter and the ferry steps, and they have continued the interior strengthening of the pier for the fourth winter. The promenade is to be widened by approximately 100-ft., and one stretch has been estimated to require 3,800 cubic yards of foundation, of which 3,340 have been put in; 7,500 cubic yards of wall, of which 3,160 have been done; and 112,000 tons of filling, of which 44,000 tons are now in.

Liverpool Deputation to the Treasury.

Sir John Sandeman Allen led a deputation of Merseyside M.P.s—accompanied by a deputation representing dock and harbour interests—to interview the Financial Secretary to the Treasury on the interpretation of the Import Duties Act. The deputation urged that the adding of port charges to the c.i.f. value of goods was causing serious grievances and disturbance of business. The Dock and Harbour Authorities' Association was represented by Mr. Ashley Cummins, the Mersey Docks and Harbour Board by Mr. L. A. P. Warner and Mr. Concannon, and the Port of Manchester by Mr. Alfred Watkin (chairman of the Manchester Ship Canal Company), Sir William Kay, Mr. F. A. Ayre, Mr. M. Kissane, and Mr. H. M. Gibson. Sir John Sandeman Allen referred to the inequality as between port and port caused by the inclusion of dock dues and landing charges in the value of goods for import duty purposes, and the serious effect which they might have on the trades concerned, as well as the ports. It was arranged that a representative committee of eight should be set up to discuss with the Customs and Excise Department the further steps to be taken, with a view to removing the difficulties referred to. The Committee will consist of two representatives of the Docks and Harbours Association, three representatives of the London, Liverpool and Glasgow Chambers of Commerce, one representative of the Manchester Port and Manchester Chamber of Commerce, and one representative of the railway ports and a representative of the London wharfingers.

Liverpool's import trade has suffered a set-back by the decision of the Commissioners of Customs and Excise to withdraw the arrangement for collecting import duties on the c.i.f. value of goods, excluding dock rates and town dues, in assessing the value of goods. The effect of this is to take the dock rates and town dues into account when assessing the dutiable value. Master porters' charges, however, continue to be excluded from the calculation, as these do not arise until the goods have been deposited on the quayside. Extra charges are incurred in Liverpool, one reason being that discharging over the side into lighters or barges owned by the importing firm is comparatively rare here, whereas at London and in other centres it is quite a usual feature. Dues at London range from 2d. to 3s. per ton, whereas at Liverpool they run from 1s. to 10s. per ton. Liverpool Chamber of Commerce convened a meeting of trade associations which passed the following resolution: "That if duty has to be paid on any charges incurred after delivery at the ship's rail, such charges shall be agreed for the purposes of this Act at a uniform rate for all ports in the United Kingdom and Northern Ireland."

Notes from the North—continued

Sequel to Collision with Lightship.

Liverpool stipendiary magistrate delivered a considered judgment in the case of the Mersey Docks and Harbour Board v. Robert Cecil Smith, master of the steamer "Rutland," who was summoned for carelessly permitting or suffering his vessel to strike against the Formby lightship "Planet" in the Queen's Channel of the River Mersey, and also for failing, without reasonable cause, to stay by the lightship until he had ascertained that the "Planet" had no need of assistance. The stipendiary said the "Rutland" was outward bound and in a compulsory pilotage area, and was under the pilotage of the mate of the "Rutland," Mr. J. G. Charlton, who possessed a pilotage certificate for the Liverpool pilotage district. The navigation of the ship was entirely under his control, and all orders which were given were his, although some of them may, in fact, have been suggested to him by the defendant, and passed on by the defendant. The first point which arose for consideration was the question of whether the defendant was the "master" of the "Rutland" within the meaning of Section 107. That point arose for consideration because there was a definition of the word "master" in Section 3 of the Mersey Docks (Consolidation) Act, 1858, which stated that "the word when used in relation to any vessel shall mean any person whether the owner, master, or other person, lawfully or *de facto*, having or taking the command, management or charge of the vessel for the time being." With that definition in his mind, it seemed to him that the evidence showed that the person who was lawfully or *de facto* having or taking the command, charge or management of the "Rutland" at the time of the collision with the "Planet" was Mr. Charlton, the mate and licensed pilot, and not the defendant, and that the defendant, therefore, ought not to be convicted by him upon that first information, because the defendant was not then the master of the "Rutland" within the meaning of Section 107. Dealing with the second information, after the collision the defendant must, he thought, clearly be regarded as the master or person in charge within the meaning of Section 422. Upon considering the evidence as to the movements of the "Rutland" after the collision, he thought that what the defendant ought to have done was, as soon as possible after he had got clear of the "Planet," to have reduced the speed of, or stopped, the engines altogether, and to have endeavoured by every means in his power to keep as near to the "Planet" as he could, while he communicated by signal or otherwise and ascertained what damage had been done and whether she required assistance. As to the duty of the defendant to have stopped his ship in such circumstances, it seemed to him (the stipendiary) clear that there was a statutory duty cast by this section on the master of a colliding ship to stop and render assistance if possible. There would have been no real danger to the defendant's vessel or crew if he had stopped and endeavoured to stay by the "Planet," at any rate for a time sufficient to ascertain her need of assistance. The stipendiary dismissed the first summons because of the view he took that the master was not in charge of the vessel, but the chief officer, a certificated pilot for the Mersey district, and convicted the defendant on the second charge of failing to stand by after collision, imposing a fine of £20. The stipendiary expressed his willingness to state a case should either of the parties decide to appeal.

Progress of Port of Manchester.

The first quarter of the year has shown no improvement in the trade of Manchester port. Australian and New Zealand cargoes homewards have improved. A steady increase in this trade is anticipated as, apart from fiscal considerations, the Manchester area is a growing market for Australian produce. Raw cotton traffic has been more than maintained, for, despite depression in the staple industry, Manchester's import figures have so far this season been an improvement on last season, which created a record for the port. Close upon 600,000 bales have entered the port since the current season commenced on August 1st last—an increase of over 90,000 bales on the corresponding period of the previous season. Against this increased importation of the raw material, outward shipments of fine goods have shown some improvement—notably to the Persian Gulf. Oil imports have shown an upward tendency. The oil traffic at Stanlow is second only to London in importance, and the docking facilities there are being considerably extended. A new oil dock is under construction which will treble the amount of traffic which can be dealt with at this point. Another important work under construction at the present time is new waterside facilities for the Irlam works of the Lancashire Steel Corporation. A new lay-by, 600-ft. in length, is nearing completion. It is being equipped with the most modern ore discharging plant. During the period under review the rates for labour and towage services and the elevator rates on grain were the subject of reductions. Manchester Ship Canal Company, in its approximate traffic returns for March, state that the receipts of the main waterway for the month were £82,766, against £91,739 in February and £91,891 in March last year. The total for the first quarter of this year is £273,218, or £6,476 less than that for the first quarter of last year. On March 1st, however, the general tariff came into operation, tending to check the flow of imports, and there has been a fall in traffic receipts between February and March of £9,000, against increases of £11,000 last year and £6,500 the year before. In the last few months the Ship Canal must have derived considerable benefit from the increased importation of raw cotton to the Port of Manchester. Imports so far this season from August 1st to April 15th have been 650,489 bales, against 530,693 bales in the corresponding period of last season.

Reinforced Concrete Structures

A Committee has been set up by the Building Research Board of the Department of Scientific and Industrial Research "to review present methods and regulations for the use of reinforced concrete in building and to make recommendations for rules of practice embodying the best available technical information and experience."

The immediate occasion for the appointment of the Reinforced Concrete Structures Committee was a request from the London County Council. The Council wrote to the Department referring to the activities of the Advisory Committee appointed by them to consider and report on any necessary amendments of the London Building Act, 1930. This Advisory Committee, it was stated, were impressed with the draft code of practice, drawn up by the Steel Structures Research Committee, for the use of structural steel in building, and considered that their work would be greatly facilitated if they could be furnished with a similar code for the use of reinforced concrete.

Urged by this request, and appreciating also the national need for authoritative up-to-date information on the design and construction of buildings wholly or partly of reinforced concrete, the Department of Scientific and Industrial Research decided to set up a Committee of the Building Research Board forthwith, under the chairmanship of Sir George Humphreys, Chairman of the Board. Another member of the Board, Mr. B. L. Hurst, was also appointed on the Committee. The Institution of Civil Engineers, the Royal Institute of British Architects, the Chartered Surveyors' Institution, the Institution of Structural Engineers, the Institution of Municipal and County Engineers, the British Standards Institution and the Institute of Builders were each invited to nominate two members. All the institutions willingly accepted the invitation, with the exception of the British Standards Institution, who preferred to assist later in the preparation, if wanted, of a British Standard Specification based on the proposed code. The Committee consists of 14 members. The Director of Building Research, Dr. R. E. Stradling, is acting as executive officer to the Committee.

It will be realised that the functions of the Committee are limited to the drawing up of technical rules of practice based on existing knowledge and experience. No special funds are available for research and the Committee is in no way concerned with the framing of legal regulations or with other administrative action. It is hoped, however, that the code of practice, when drafted by the Committee, will be of assistance not only to the London County Council, but also to the Ministry of Health and other building authorities in any actions they may consider it desirable to take.

It may be mentioned that the London County Council, on the recommendation of their Advisory Council and of their Building Act Committee, have now approved "a code of practice for the use of structural steel and other materials in building as the basis of consideration of application under Section 58 of the London Building Act, 1930, for release from the provisions of the third schedule of the Act." This code is based on the recommendations of the Steel Structures Research Committee.

The Nor-Rust Liquid Lead Co., Ltd.

The above Company have received several reports on the efficiency—under working conditions—of their Nust preparation.

This preparation is composed of a fine metallic pigment which accelerates the formation of a metallic coating impervious to corrosion.

Previously Nust was supplied in the form of a powder together with the requisite oil for mixing purposes, but now the Company have introduced a ready-mixed product which will be supplied in 10, 28 and 56 lbs. containers.

The Dock and Harbour Authorities' Association.

Owing to shortage of space we have unavoidably had to hold over the conclusion of the above Association's report until next month.

French Harbour Matters

MOST of the Harbour Boards of the leading French ports have already published statistics concerning shipping during the first quarter of 1932. Among them may be mentioned, in the first place, the port of Rouen, where shipping has included the following items:—

	JANUARY-MARCH 1932	1931
Ships arrived	950	1,008
Imports (Tons)	1,626,754	2,036,965
Ships cleared with cargo ...	271	291
Exports (Tons)	163,541	190,107
Total Traffic (Tons) ...	1,790,295	2,227,072

The chief imports are summarised as follows:—

	JANUARY-MARCH 1932	1931
Coal	855,084	1,273,298
Oil	302,066	273,098
Phosphates	92,446	105,800
Lumber	32,694	37,493
Wood pulp	54,603	73,727
Wines	141,163	164,861

It will be seen from the above that the greatest part of the decrease is due to smaller imports of coal, which are connected with the restrictions which have been imposed by the French Government in connection with the fuel trade. Since these restrictions have been lifted in the first part of 1932, there is reason to believe that things might still improve in the second part of the year, and that shipping at Rouen may increase.

No less interesting are the results for Marseilles, which may be summarised as follows:—

	JANUARY-MARCH 1932	1931	1913
ARRIVALS.			
Number of Ships ...	1,791	1,857	2,038
Tons of Registry ...	3,587,307	3,612,683	2,430,468
Tons of Goods	1,082,614	1,169,866	1,351,543
Passengers	56,049	58,455	48,222
CLEARANCES.			
Number of Ships ...	1,792	1,870	2,001
Tons of Registry ...	3,589,944	3,632,846	2,423,914
Tons of Goods ...	473 656	559,358	729,768
Passengers	51,151	55,159	47,885

Shipping at Marseilles has shown a decrease both in respect to 1931 and 1913. The net registered tonnage of the ships arrived and cleared, however, has increased since 1913, owing evidently to the larger size of the vessels.

The traffic at French ports is influenced by the general crisis and by the particular developments of French economics; yet the French Government and the Harbour Boards at the various leading French ports are doing their best to increase the facilities and reduce charges in order to attract to French ports a larger volume of shipping. As a matter of fact, at Boulogne-sur-Mer it appears that, in the course of the last meeting of the Chamber of Commerce and Industry at that port, the President of the Port Commission made known the fact that negotiations are going on with French financiers for the purpose of obtaining the necessary funds to replace the old warehouses existing at present on the Quai Gambetta with modern concrete warehouses, to be built on the Southern Mole of the Loubet Dock. The Chamber of Commerce and Industry has decided to continue these negotiations with the greatest speed in order to proceed with the building of the new warehouses.

At Le Havre the Compagnie des Docks-Entrepôts has submitted to the Chamber of Commerce an application which has been made to the Ministry of Commerce for the purpose of rebuilding the warehouse destroyed by fire on December 10th, 1931. According to this project the new building is to occupy the same space occupied by the old one, but it will have three floors instead of two, and every floor will have a capacity of 1,500 kilogrammes of goods per square metre instead of 1,200 kilogrammes, as in the old warehouse. The new building will thus have a storage capacity of about 5,000 tons.

At Nantes the Quai Dumont d'Urville has been brought into use. This is situated on the left-hand side of the Loire and is to be used by the river boats. The new quay has a length of 300 metres, and the cost of building it has reached 2,700,000 French francs. In order to improve the discharging facilities for phosphates and pyrites at La Rochelle, the Chamber of Commerce and Industry at that port has decided to build two 5-ton electric cranes on the Quai Carnot. Special arrangements have been made to facilitate the direct unloading of phosphates into railway cars, and it is understood that these cranes are to be put into operation shortly.

A project has been approved concerning the construction of the " Bassin du Phare " at Marseilles, the cost of which is estimated to reach 420 million francs. The Chamber of Commerce of Marseilles will bear 50 per cent. of the cost of the new dock, which will increase the quayage at that port to about 22 kilometres. At the same time it has to be noted that the harbour facilities at the Etang de Berre, the inner section of the Port of Marseilles, has been opened to large size ships, the tanker " Henri Desprez," carrying about 12,000 tons of oil, recently being accommodated there. It would appear that certain American oil interests have applied to the French Government for permission to build a new coasting station in the zone of the Etang de Berre. Among the decisions which have been taken in the course of the past few weeks by the Marseilles Chamber of Commerce may be mentioned a reduction in charges for the use of the 150-ton pontoon. However, it has been decided that no transfer of the pontoon into the various docks will any longer be granted, and that operations shall be undertaken only at a fixed place. Furthermore, steps have been taken to prevent an increase of pilotage charges.

The Port of New Orleans

ENCOURAGING improvement was shown in the business of the Port of New Orleans during the month of March. According to figures compiled by the Dock Board 210 ocean-going vessels having a total tonnage of 905,729 tons arrived during the month. While this was the same number of ships as arrived during March, 1931, it represented an increase in tonnage of 11,640 tons.

Ships using the public wharves had a total tonnage of 764,597 tons, an increase of 52,772 tons over March, 1931.

Cargo paying tollage amounted to 265,246 tons.

During the month 955,462 bunches of bananas were unloaded by the Board's modern conveyors.

Substantial increases were recorded by many of the commodities moving over the port's wharves. Among the imports non-metallic minerals increased 115,264 tons; wood and paper increased 7,331 tons; vegetable products other than food products increased 5,404 tons; chemicals increased 5,115 tons; animals and animal products increased 204 tons and miscellaneous and unclassified freight increased 1,343 tons. Among the exports the principal gain was in cotton which increased 125,494 bales over last year, while vegetable food products increased 7,480 tons and other vegetable products and non-metallic minerals increased 4,450 tons and 2,585 tons respectively.

The Inner Harbour Navigation Canal again showed marked activity. During the month 845 vessels having a total tonnage of 331,860 tons used the canal.

Of the 210 ocean-going vessels which arrived during the month, 123, more than 58 per cent., flew the American flag. These American ships represented approximately 61 per cent. of the total gross tonnage.

The following is a tabulation of the number of ocean-going vessels, showing gross tonnage arranged by nationalities, which arrived during March, 1932:—

Nationality.	No. of Vessels.	Gross Tonnage.
American	123	549,792
British	13	79,921
Brazilian	3	17,449
Danish	4	10,618
Dutch	3	13,733
French	2	11,986
German	6	30,294
Honduran	23	71,246
Italian	5	27,849
Japanese	2	12,692
Nicaraguan	1	546
Norwegian	22	65,059
Spanish	1	6,632
Swedish	2	7,912
	210	905,729

Irish Harbour Matters

Dublin

Butt Bridge, Dublin.

SINCE the erection of the loop line overhead railway across the River Liffey at the Custom House, Dublin, there has been no occasion to use the swivel bridge, as Butt Bridge was known to many Dubliners, for the purpose of allowing boats up the river. It served its purpose when some boats could reach O'Connell Bridge, but with the railway overhead it was not a thing of beauty, and was only useful as a means of communication between the north and south sides of the city. Many attempts have been made to secure a removal of the bridge, but they were not successful until last year, when the Dublin Port and Docks Board had a Bill passed through the Free State Parliament which enabled them to remove the old and build a new bridge.

The new bridge is now almost complete and was recently inspected by a party of members of the Engineering and Scientific Association of Ireland, to whom the construction was described by Mr. Joseph Mallagh, engineer to the Dublin Port and Docks Board, who mentioned that it only awaited the laying of water and gas mains.

An interesting circumstance which Mr. Mallagh revealed about the construction of the bridge was that, in order to obviate the gradient which would have been caused by an arched bridge, it had been built in two halves, each on a cantilever arm, which did not join and which were capable of carrying the full weight that would be placed on the bridge. To provide for expansion and contraction, as a result of temperature variations, the concrete floor was built upon a steel base with a thin layer of grease between.

The width of the roadway between the kerbs is 40-ft., which will be adequate for four streams of traffic and will, if necessary, accommodate five or even six streams. On each side, to a width of 9-ft. from the kerbs, it is of stone setts for horse traffic, and the centre is of asphalt, with bituminous concrete rolled in on top, giving a reasonably smooth surface without skid. The clearance under the bridge is the same as that under O'Connell Bridge.

Automatic Fog Signalling.

After their inspection of Butt Bridge the members of the Engineering and Scientific Association of Ireland were taken by Mr. Mallagh to the lighthouse at North Wall, where they were shown the automatic fog-signalling apparatus. This is the only entirely automatic electrically operated lighthouse in existence, and Dublin is the only port in the world to be equipped with such a signal. Mr. Mallagh explained that the signal was operated through a beam of light coming from a building on the opposite wall, which, on passing through a lens in the lighthouse, fell upon a photo-electric cell. When this light was interrupted by fog or any other means it set up an oscillation, and so started a motor which rang the alarm bell and kept it ringing until the fog cleared.

The invention, said Mr. Mallagh, had been working for about ten years, but it was being constantly improved. Various difficulties cropped up, one of these being the dampness that was inevitable in a lighthouse, and which destroyed the insulation. This difficulty had been overcome.

Cork

Cork Imports of Wheat and Flour.

At the first April meeting of the Cork Harbour Board, the chairman (Mr. Richard Wallace) stated that wheat imports for the three months ending March 31st amounted to 3,503 tons, as against 6,437 tons for the corresponding period last year.

Replying to Mr. P. Crowley, the chairman said he could not say if this had anything to do with the peaceful penetration of the English milling combine. If the drop in wheat continued there was something amiss.

Mr. T. O'Shea, as a director of a firm of grain importers, said that the decline in wheat imports was a result of the gradual closing up of Irish mills. English interests, he said, had adopted a scheme whereby imports of wheat were standardised at their present low level. They were allowing Irish mills to manufacture only a datum quantity, and were satisfied to keep them in a crippled condition. It was useless, therefore, to look for increased dues from wheat imports. He criticised the fact that the Board's dues on wheat were greater than those on flour and were unfair on the local miller.

Mr. Gayer, general manager, said that the position regarding dues arose from the operation of the 12½ per cent. clause, which permitted them to charge only that percentage of the freight. In the Bill which the Board hoped to get through the Dail and Senate this season they would remedy the matter by putting the maximum duty on flour 100 per cent. higher than that on wheat.

The chairman said that 22,721 tons of flour had come into the port during the last year, as against 19,935 tons in 1930. He was afraid that the position was even worse at present, but hoped that the Bill now being promoted by the Board would come to their relief.

Tralee

Inquiry on Tralee and Fenit Harbour Commissioners' Application to raise £91,000.

In the Court House, Tralee, Co. Kerry, Mr. Joseph Ingram and Mr. Thomas Batchem, M.I.C.E., held an inquiry into the application of the Tralee and Fenit Harbour Commissioners for a provisional order to raise £91,000 for the purpose of building a new viaduct at Fenit Pier; a structure widening the pier for its entire length; a new wharf, and lairages.

The Harbour Commissioners seek authority to borrow such sums as may be required for the purpose of the provisional order not exceeding on the whole £99,000, repayable in not more than 50 years on the security of the harbour pier and works authorised by the Orders of 1880 and 1932, and of the lands, tolls, rates, dues and charges authorised.

On behalf of the applicants it was contended that Kerry farmers could effect a saving of £1 per beast for every animal shipped at Fenit.

Mr. McCarthy, engineer, explained the plans which he had prepared in connection with the proposed scheme. Work No. 1, the present structure was wooden and beyond repair. It was 18-ft. 9-in. wide. The new viaduct would be 880-ft. in length and 26-ft. in width. It would be constructed of ferro-concrete with piles spaced longitudinally 15-ft. apart, and having a span at the southern end of 50-ft., as at present. His estimate for this work was £27,500. Work No. 2 was the approach which was absolutely necessary. Work No. 3 was the main pier on which the loading and unloading of vessels was carried on. The length was 750-ft. His estimate for this was £16,400, including £2,550 for sheet piling. There was a crane track on the pier which he proposed to widen to enable an independent train truck to be put in. He estimated the cost of No. 4 work —improving the West Quay—at £43,000. The advantage of this improvement would be two additional berths. The total length of the quay was 600-ft. At low water spring tides there would be a depth of 10-ft. of water at this pier.

Belfast

Belfast Port Affairs.

The vacancies on the Belfast Harbour Board craeted through the retirement by rotation of seven members were filled by the unopposed return of the retiring members as follows: Sir Robert Baird, the Rt. Hon. J. Milne Barbour, Sir George Clark, the Rt. Hon. Sir Thomas Dixon, Mr. John Garrett, Mr. James Mackie and the Rt. Hon. H. M. Pollock.

Sir Thomas Dixon, proposing a vote of thanks to Mr. R. E. Herdman, the chairman of the Board, who acted as returning officer, said the members appreciated very much the way in which Mr. Herdman carried out the affairs of the Board. In thanking the electors for returning him and his colleagues, Sir Thomas said it was most gratifying to them, and went to show that the electors were satisfied with the way the Trust was being carried out.

Sir Robert Baird, who seconded, said they were very much indebted to their chairman for his services in that capacity. It was gratifying to see the return of Mr. Pollock, who had served on the Board for 31 years; Sir George Clark, 26 years; Sir Thomas Dixon, 24 years, and Mr. Barbour, 18 years.

Mr. Garrett, in support, said their chairman was a very regular attender at the meetings, and the courtesy and happy spirit which he brought to the office were factors in the smooth working and were highly appreciated by all.

Mr. Herdman, in reply, congratulated the members who had been re-elected and Belfast on having such men who were willing to give their time and devote their energies to the work of the great Trust. Some of the members re-elected that day were amongst those who helped to build up the prosperity of the Province of Ulster, and their names would go down to posterity as men who had helped to make Ulster what she was and what they all wished her to be. He expressed thanks to the members for the kindness and support they had extended to him on every occasion. His work on the Board had been a real labour of love.

Seven Times Chairman.

At a meeting of the Belfast Harbour Board on April 5th, Mr. R. E. Herdman, D.L., was re-elected chairman for the seventh year, on the motion of the Rt. Hon. H. M. Pollock, seconded by Sir Thomas Dixon.

Mr. Pollock said the members were unanimously of opinion that, having regard to Mr. Herdman's ripe experience and his six years as their chairman, he was best qualified by equipment and otherwise to continue in the occupation of that office. Mr. Herdman had been elected President of the Dock and Harbour Authorities Association for the year 1931-32. That was a posi-

Irish Harbour Matters—continued

tion of much importance and distinction, and was regarded not only as a great compliment to Mr. Herdman and a tribute to his personality and ability, but it was also a great compliment to the Harbour of Belfast and its prestige amongst the first-class ports of the United Kingdom.

During Mr. Herdman's tenure as chairman of the Belfast Board one of the greatest schemes ever undertaken by the Board had been projected and was already on the way to fruition. That scheme was evidence of the fact that Belfast was fast becoming geographically and physically one of the finest ports to be found in any part of the world.

Sir Thomas Dixon said they could not possibly get anyone better fitted for the position. They all realised the great interest Mr. Herdman took in affairs of the Trust, the time he devoted to it, and his intimate knowledge of the requirements of the port.

Sir George Clark and Sir Robert Baird also spoke in the highest terms of Mr. Herdman.

The chairman, in reply, said it gave him a great deal of gratification to hold the position he did, for it enabled him still longer to continue his work for the port. He felt that in working for the port he was working for Ulster, and he knew that his colleagues on the Board were imbued with the same idea of doing everything possible for the benefit of the province.

The report of the Harbour Master (Captain McIntyre) showed that 410 vessels arrived at the port in the period extending from March 13th to April 2nd, as follows: Coastwise and cross-channel, 375; foreign, 32; non-trading, 3.

The total tonnage of the vessels which arrived from January 1st to April 2nd was: Coastwise and cross-channel, 689,905, an increase of 3,307 as compared with the corresponding period of 1931; foreign, 221,827, an increase of 48,469; non-trading, 7,788, a decrease of 14,402; total, 919,520—an increase of 37,374.

In the Examining Accountant's report submitted at a meeting of the Belfast Board it was stated that the amount spent in the construction of the new dock up to February, 1932, was £219,000.

North-East Coast Notes.

Ambitious Sunderland.

AN ambitious scheme of port improvement was outlined by Mr. J. E. Dawson, chairman of the River Wear Commission, when he was re-elected chairman at the annual meeting of the Board. They were all pressing needs, he declared, but as they would cost probably £350,000, the work would have to be done gradually.

"It is unfortunate," he said, "that a large volume of prosperity does not come to us, as there is so much that is needful to the port which could be done if we could see our way financially to undertake some of the more urgent necessities. Port affairs move so slowly that unless we can continuously be expanding our facilities we are seriously handicapped in the race for prosperity. I sometimes think that it may be necessary to have the town still further allied to us in matters of port development if we are ever to be able to make the strides essential to the town's well-being. I expect that within a very few years we shall be compelled by the pressure of circumstances to embark upon the creation of a new lock entrance to the docks capable of accommodating the larger ships which, more and more, are coming into existence. That scheme would probably cost £250,000 to £300,000. The scheme carries with it the need to straighten and deepen still further the sea channel. The cost of this would involve an outlay of something between £50,000 and £100,000, according to what was done and how it panned out. It could be done piecemeal over several years by continuous operations principally performed over summer months.

Deeper Water Required.

"The annual cost need not be burdensome and I recommend this to your consideration because we are already committed to the policy of deeper water in the area of the harbour, where, besides the Corporation new deep water quay, there is need for deeper draughts at other points, such as dry docks, etc. The bunkering of large vessels with both coal and oil is a pregnant possibility of the future. The dry-docking and handy bunkering of steamers are attractions to the port which go hand in hand with deeper water. We should have a second large dry dock accessible from the harbour, but I have no definite scheme to put before you. I only mention it as one of the needs for greater depth. If the new entrance to the dock were undertaken, it would imply deeper dredging in the docks themselves. Some day we shall have to tackle the consideration of wave traps behind the inner piers, which would involve the reconstruction of the inner piers. That is a big scheme which may not come into prominence until the new dock entrance becomes an accomplished fact. The closing of the South Outlet and the eventual creation of new land in that area is a matter of urgency. It might cost about £50,000, but that, again, could be spread over some years. It is an attractive scheme, as it would both save current expenditure and bring in new money. I think this is as far as I dare go to-day with development ideas." He concluded by expressing the hope that members were sufficiently courageous to keep on with their policy of progress, and see to it that they were always engaged to the utmost of their possibilities, because otherwise they could not hope to keep their place in relation to others.

Sunderland's Trade Figures.

Mr. Dawson, commenting on the annual accounts, which were adopted, said they were very gratifying in view of the difficult year they had experienced. That the accounts should show a deficit of only £12,600 was very creditable, he thought. For the whole port, the best year for coal shipments was 1927, when nearly 5½ million tons were shipped. Last year the total was 4,905,000 tons, which, he considered, very creditable in an unprecedently bad year for the coal trade.

Baltic Conference and North-East Coast.

The latest issue of the circular of the Baltic and International Maritime Conference contains the report of the Conference Delegation which visited the East Coast ports this year. The visit of the delegation was the outcome of complaints made by shipowners concerning conditions at these ports for loading coal and bunkers, and the Conference, in deciding upon the visit, were influenced by the fact that shipowners trading to and from the Baltic and the White Sea were interested in an increase of the coal trade from Great Britain to the Scandinavian and other countries in the Baltic, because the carriage of coal was a desirable factor in obtaining the most economical round trips with wood and other cargoes the one way and coal the other. As a result of the representations made by the Conference Delegation, certain concessions have been granted, details of which are given in a special circular issued by the Conference under date of March 31st. These concessions, it is thought will be appreciated by owners as a first step in the right direction with the object of attracting bunker business to the ports concerned.

(1) The Blyth Harbour Commission has reduced the harbour dues on vessels calling to bunker at Blyth from 1½d. per net registered ton to ¾d. per net registered ton as from April 1st, 1932. The Commission further gives the assurance that they will take care, as far as it is possible for them, to procure convenient berths for vessels calling to bunker only, in order to render every assistance in promoting the bunker trade of the port.

(2) The Tyne Improvement Commission has decided that, instead of charging gross dues and, thereafter, granting a rebate in respect of vessels which load bunker coal only, net dues will be charged when the vessels leave or clear from the port.

(3) The London and North-Eastern Railway Company has agreed to charge the same dues on vessels loading bunkers only at the company's dock, Tyne Dock, as is charged at the docks and staiths of the Tyne Improvement Commission. According to the new arrangement the net dock dues will be as follow: For vessels destined to ports where the dues are 2d., the net dock dues for bunkering to be 0.50d. per net registered ton, bunkers not to exceed half of the vessel's net registered tonnage. Where the dues are 4d. and 6d. the net dock dues for bunkering to be 1.75d. per net registered ton, bunkers not to exceed two-thirds of the vessel's net registered tonnage.

Good Blyth Shipments.

The chairman of the Blyth Harbour Commission (Mr. Ridley Warham), at the March meeting of the Board, congratulated the members on the maintenance of the coal shipments from the port in the first two months of the year. The figures for February and for the first two months of the year as compared with 1931 and 1913 were: February, 1932, 419,391 tons; February, 1931, 361,676 tons; February, 1913, 393,093 tons; for the two months ended February, 1932, 862,247 tons; February, 1931, 742,633 tons; February, 1913, 764,474 tons. The shipments thus show an increase of 57,715 and 26,298 tons respectively on 1931 and 1913, and the total for the two months shows an increase of 119,614 and 97,773 tons respectively compared with the corresponding period in 1931 and 1913, or an increase of 16 per cent. on 1931, and 13 per cent. on 1913 figures.

The Harbour of Dundee

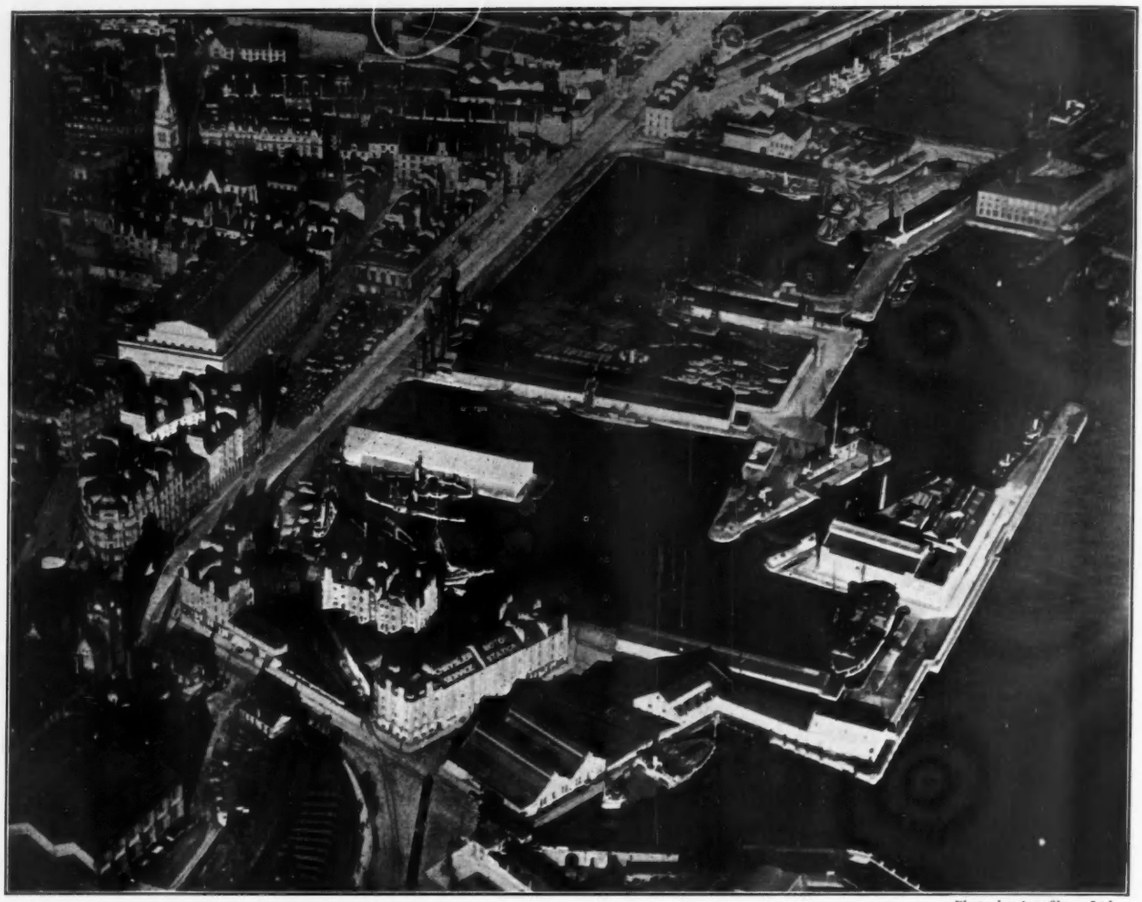


Photo by Aerofilms, Ltd.

Craig Harbour, Earl Grey Dock, Tidal Basin, King William IV. Dock, West Graving Dock and West End of Victoria Dock.

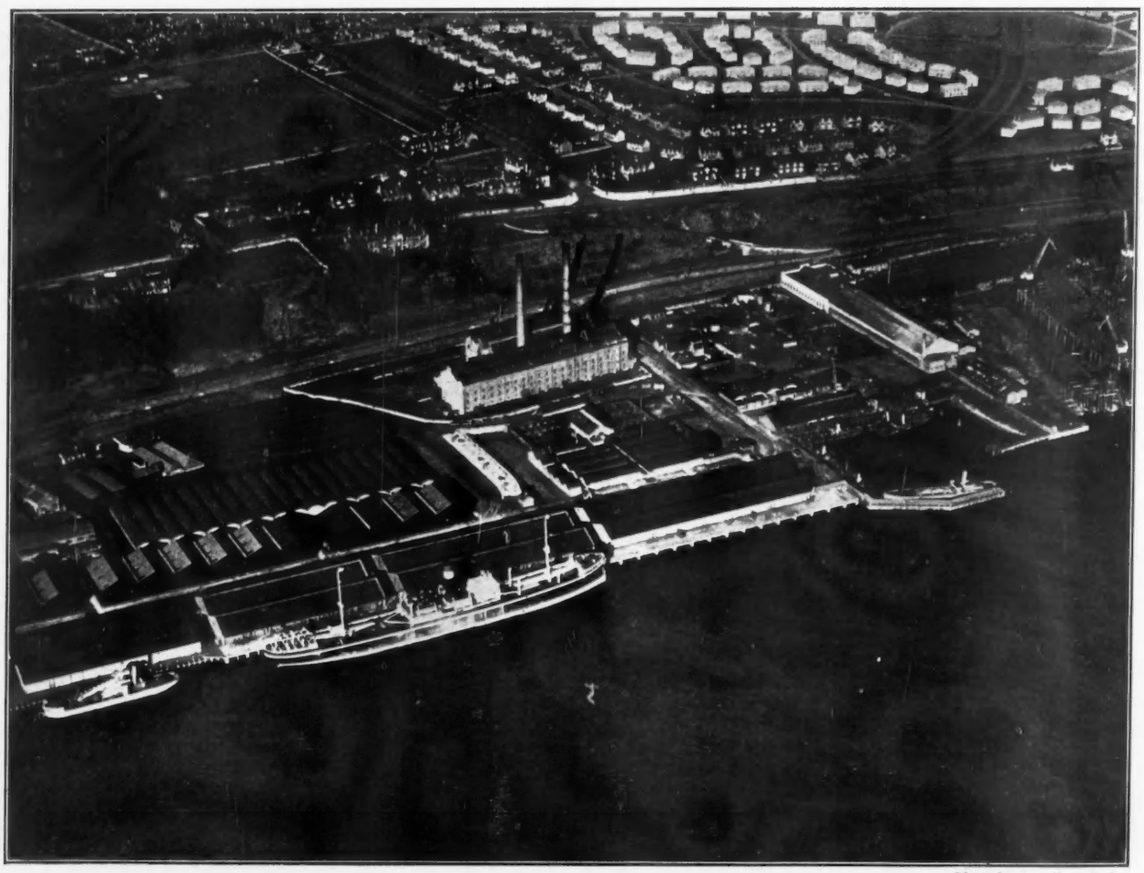
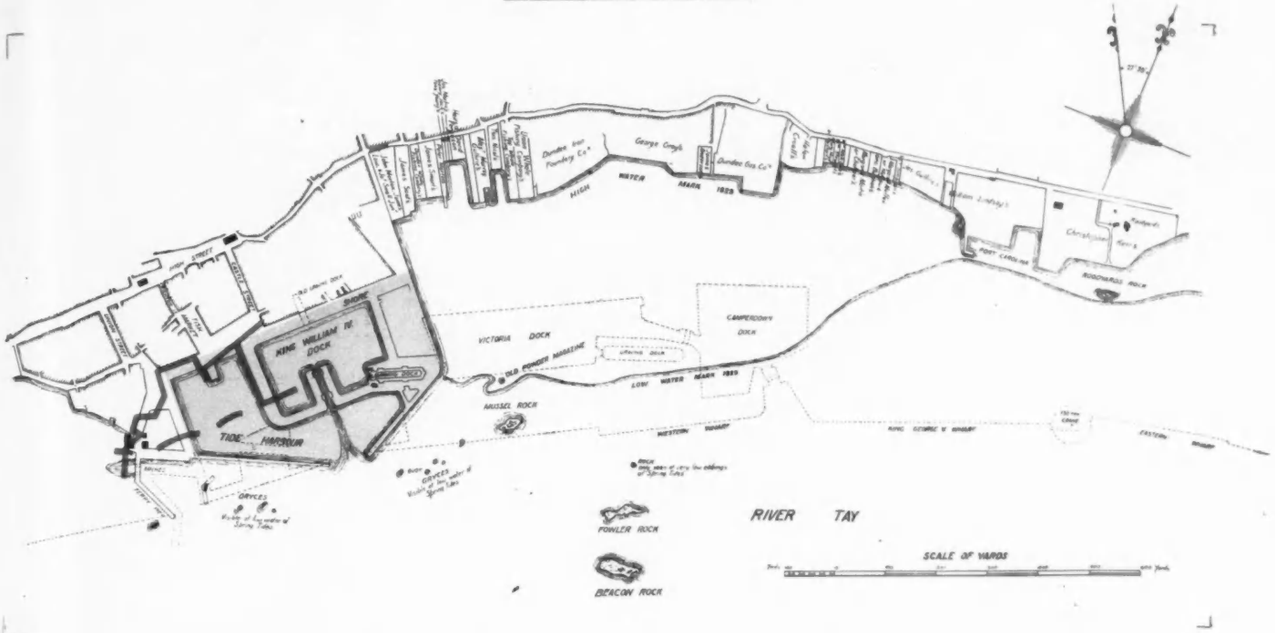


Photo by Aerofilms, Ltd.

Eastern Wharf, Sheds and Warehouses, Cattle Depot, Electricity Station, Fish Dock and Market and West End of Stannergate Shipyard.

The Harbour of Dundee



Plan of Harbour as in 1793 shewn in red; 1830 in blue; and 1930 by dotted outline.

History and Development

THE HARBOUR OF DUNDEE has played an important part in the growth and development of the City of Dundee, and of the large district served by the port, and the centenary of the constitution of the Harbour Trust was celebrated on June 17th, 1930.

The Harbour of Dundee, which is situated on the north side of the River Tay, at its broadest part, and distant about ten miles from the sea, dates from very ancient times, and its history is linked up with that of the city and of the nation.

The North Sea is swept by prevailing east winds for the greater part of the year, and the tiny craft of a few centuries ago had no refuge from Buchan Ness to St. Abb's Head except the Tay. The numerous small harbours on the coast were not available in stormy weather, the Firth of Forth, exposed to the fury of the east wind, was equally dangerous, while the Tay, protected by Tentsmuir Point on the south and Buddon Ness on the north, and the Gaa Bank and the Abertay or Drumlay Bank, which form natural breakwaters, afforded a safe anchorage.

This fact doubtless led to the establishment of fishing settlements near Dundee, and from remains, consisting of urns of unburnt clay, stone coffins with human remains, etc., found at the Stannergate during the last hundred years, this seems to have been the case. Perhaps the most valuable of these archæological finds was the disclosure of a large shell bed or "Kitchen Midden," which was exposed during excavations carried out between the river and the railway in 1878.

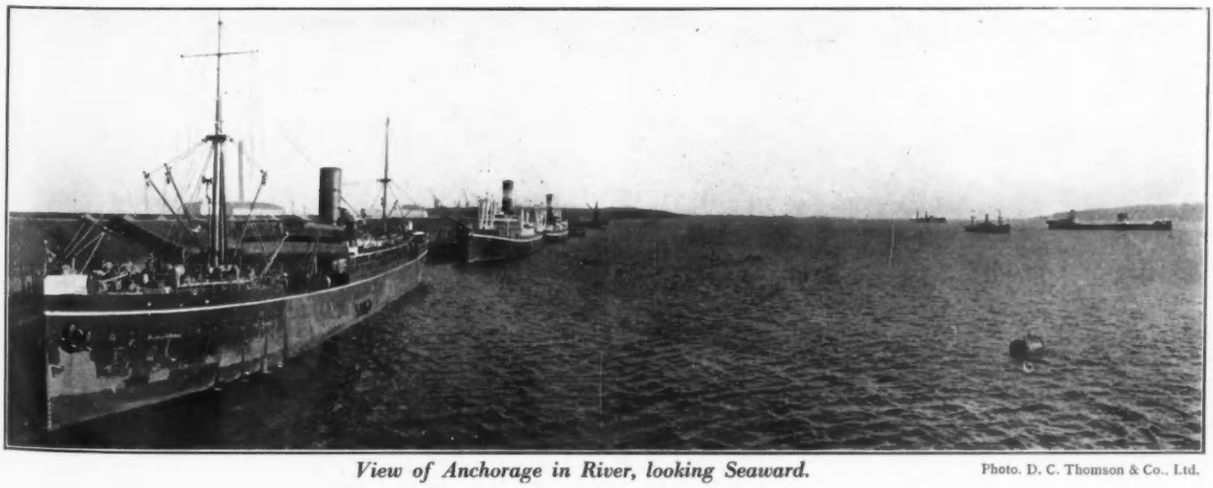
This deposit, which measured 100-ft. by 60-ft., contained a large number of the shells of edible mollusca, mixed with burnt wood, pieces of bone artificially split, porpoise bones, deer horns, and stone implements, plainly showing that a colony of fishermen had resided at this spot. The date was probably long anterior to the Roman occupation of Scotland, since 12 cists or stone coffins of the latter era were discovered interred 8-ft. above the shell bed.

It can be shown by records within historic times that the locality was regularly used as a harbour of refuge. Wyntoun states that about 1040 the ships of Malcolm Cammore, when that monarch was pursuing Macbeth, entered the Tay to support his soldiers, and although no records of commerce exist regarding this period, it is certain that a river which was navigable for ships of war would afford equal facilities for those engaged in commercial enterprise.

It is remarkable that the earliest Charter to the Burgh of Dundee—viz., that given by William the Lion, and confirmed by Robert the Bruce—granted a free harbour to the burgesses, thus implying that a harbour had been in existence before his time.

The first reference in documents to the existence of an actual shipping harbour is found in connection with the Abbey of Coupar.

Dundee was the port at which all merchandise arriving in Scotland for the use of the Abbey was received, and on April 11th, 1225, Alexander II. granted a licence for a vessel to the Abbot of Coupar "to export wool and other merchandise to Flanders under the charge of Robert of Pert and Friar Gilbert Faber."



View of Anchorage in River, looking Seaward. Photo. D. C. Thomson & Co., Ltd.

The Harbour of Dundee—continued

That Dundee was used as a harbour for import in the thirteenth century is amply proved by numerous entries in the Exchequer Rolls.

In 1264 the wine which was brought to Scotland for use in the Castle of Forfar was landed at Dundee, and in the same year there was bought at the Fair of Dundee, for the King's use, cloth and fur, which must have been imported.

Though it is difficult to form an adequate idea of the extent of the trade at the port at this early time, the accounts of the Customs levied on exports furnish some data by which to form an estimate.

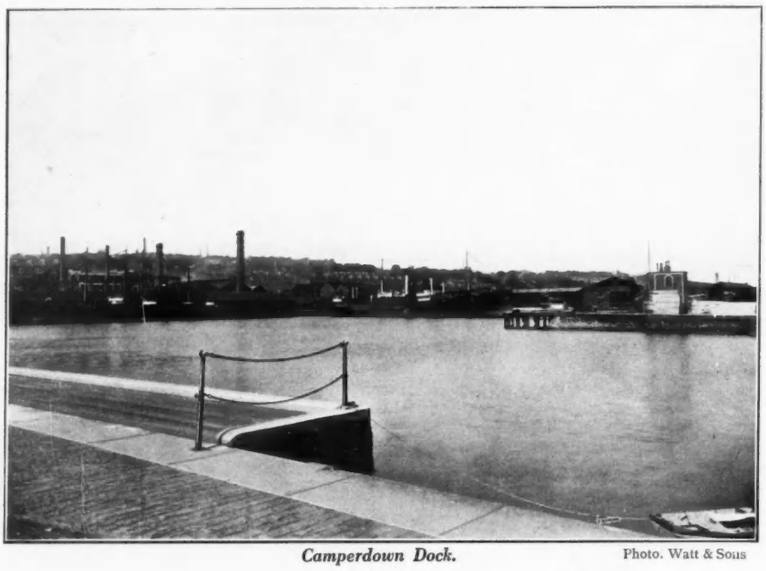
Thus in the accounts of the Customs for the year 1326-1327, the earliest document of the kind extant relating to Dundee, we find that there were carried in 18 ships which sailed from Dundee, 68 lasts, 3 sacks, 9 stones of wool, 4,203 woolfels, 7 lasts, 19 dacres, and 3 hides. The Customs levied amounted to £240 4s. 8d.

Among the imports of that year were various super-tunics of grey cloth and of coloured materials, several pieces of dyed fabrics for the King's use, and confections and pepper for the Royal Household.

Payment to Faskyn, a merchant of Bruges, for various colours purchased for painting the King's chambers in the Castle of Berwick goes to show that Dundee was preferred to Berwick as a trading port by merchants on the Continent.

Photo. Watt & Sons

King George V. Wharf and Western Wharf, looking West.



Camperdown Dock. Photo. Watt & Sons

From this time records can be followed. Thus in 1329—23 ships sailed, the Customs being £267 4s. 6d.

In 1331—28 ships sailed, the Customs being £303 2s. 8d.

In 1362—28 ships sailed, the Customs being £906 13s. 6d.

In 1372—11 ships sailed, the Customs being £1,050 14s. 1d.

In 1383—12 ships sailed, the Customs being £902 2s. 11d.

From the above it will be seen that the principal exports were wool, sheep skins and hides, and this continued until the early part of the fifteenth century.

By this time Flemings had settled in small colonies in different parts of Scotland to teach the natives the art of weaving, and the result was that cloth became an export.

The first recorded Customs levied on cloth was in 1437, on a small quantity which, however, continued to increase, till in 1479 there was exported 205 score and 6 dozen ells of woollen cloth, realising £90 3s. in Customs.

It is difficult to say when the first built harbours came into existence, but the reference in Robert the Bruce's Charter of 1329 to a "free harbour" existing at the time of Alexander III. shows that works of some kind had been erected in the thirteenth century.

Further Crown Charters were conferred on the town from time to time, and particularly in 1352, when a Charter was granted by David II., which ratified: "All the sundry Ancient Infeftments, Privileges," etc., of which the Burgh was in use and possession, "and specially the Petty Customs, Ports, Piers, and Shore Dues, Privileges and Duties thereof."

On January 20th, 1359, King David granted a new Charter, confirming all the former privileges and conferring more. King James IV. confirmed this Charter in 1511, and it was also confirmed by the Great Charter, granted by Charles I., on September 14th, 1641.

At one time a violent dispute arose between the citizens of Perth and those of Dundee. The origin of the dispute is unknown, but the avowed causes were rank and precedency in Conventions, and the limits of their respective ports on the Tay. The inhabitants of Perth maintained that

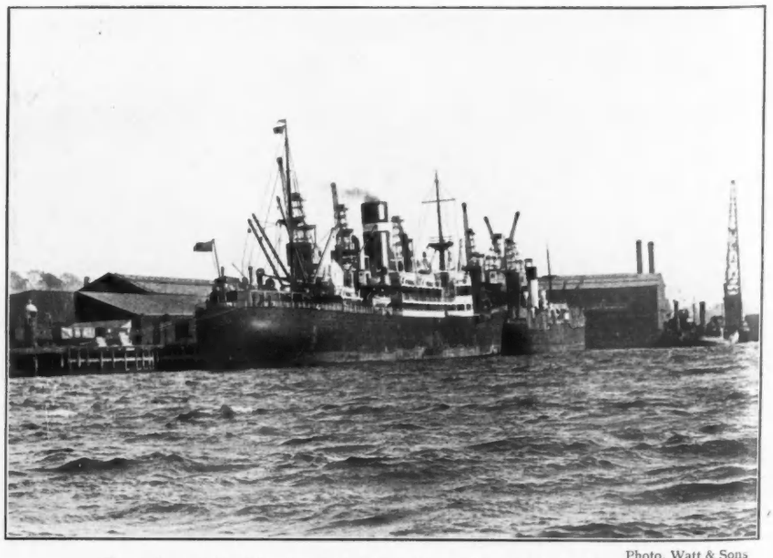
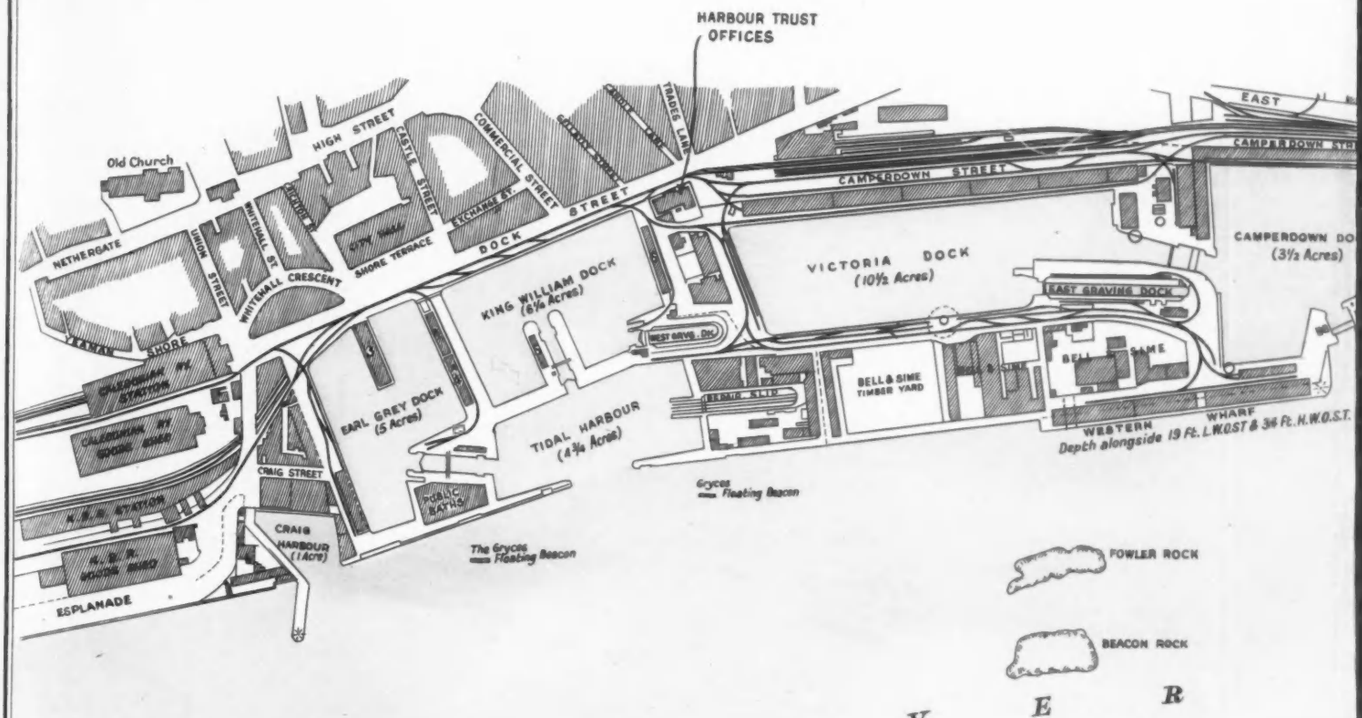


Photo. Watt & Sons

King George V. Wharf and Caledon Fitting Out Jetty, looking East.

PORT OF DUNDEE.

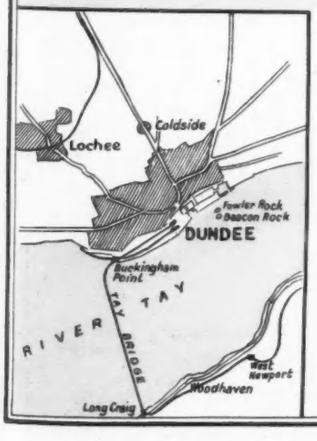
UNDER THE JURISDICTION OF THE DUNDEE HARBOUR TRUST.



TIDAL HARBOURS AND WET DOCKS

NAME	Water Area in Acres	Length of Quayage in Feet	Area of Quayage in Acres	Shed Accommodation in Sq. Yds.	Depth of Water at Entrance or over Cill of Lock at High Water. Ordinary Springs Feet	Ordinary Neaps Feet	Highest Springs Feet	Lowest Neaps Feet	Width of Entrance or Lock at Coping Level	Number and Power of Cranes
Tay Ferries Harbour -	1	845	0·37	None	19	16	20½	14	120c	None
West Tidal Harbour -	4⅜	2160	1·28	None	20	17	21½	15	210c	None.
King William Dock -	6¾	2515	3·35	1100	15	12	16½	10	39	1 2½ ton crane.
Earl Grey Dock - -	5	2545	3·81	2920	17½	14½	19	12½	49'6"	1 20-ton crane.
Victoria Dock - -	10⅜	3860	7·83	8800	21⅓	18⅓	23⅛	16⅓	60	1 3½ ton, 1 9-ton and 1 90 ton crane
Camperdown Dock -	8½	2425	9·41	7569	21⅓	18⅓	23⅛	16⅓	60	Hyd. Jiggers. 1 3-ton, 1 8 ton, Hyd. Jiggers.
East Tidal Basin -	1⅝	705	0·20	900	27	24	28½	22	135c	1 1½ ton crane.
Totals	37⅞	15,055	26·25	21,289						

(c). Between piers



NAM
West Graving Do
East Graving Do
Patent Slip

NOTE.—Th

WHAR

NAM
Camperdown W
King George W
do do Ext. No
Eastern Wharf

SCALE OF FEET.

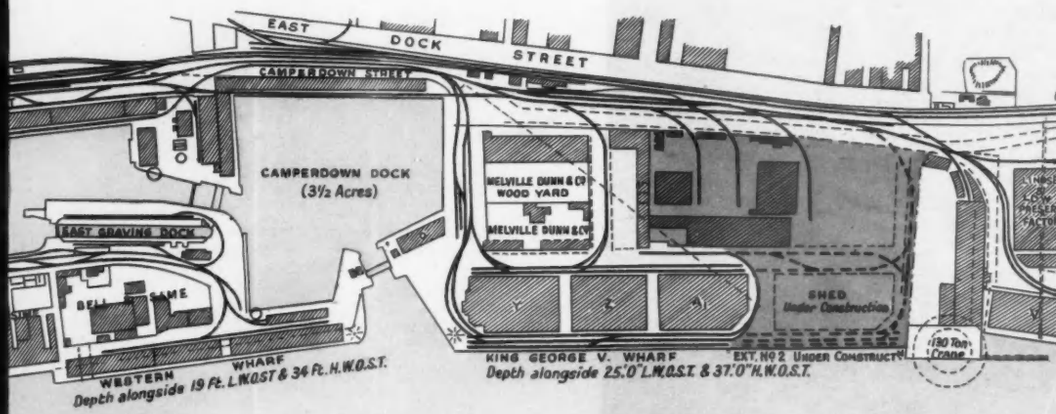
FEET 100 50 0 100 200 300 400 500 600 700 800 900 1000

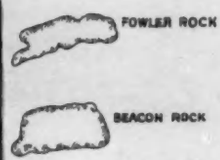
WARD & FOXLOW LTD. (LITHOS). 19

DEE.

UST.

Note;- New Works under construction col





E R T A Y

DRY OR GRAVING DOCKS.

NAME	Length of Bottom in Feet	Length of Blocks or Cradle in Feet	Length over All in Feet	Depth of Water at Entrance or over Cill of Lock at High Water. Ordinary Springs Feet	Ordinary Neaps Feet	Highest Springs Feet	Lowest Neaps Feet	Width of Entrance at Coping Level Feet	Number and Power of Cranes.
West Graving Dock - - -	250	250	278	13¾	10¾	15¼	8¾	39	1 5 ton,
East Graving Dock - - -	500	500	516	17	14	18½	12	50·6	2 5 ton.
Patent Slip - - - -		154	545					50	None

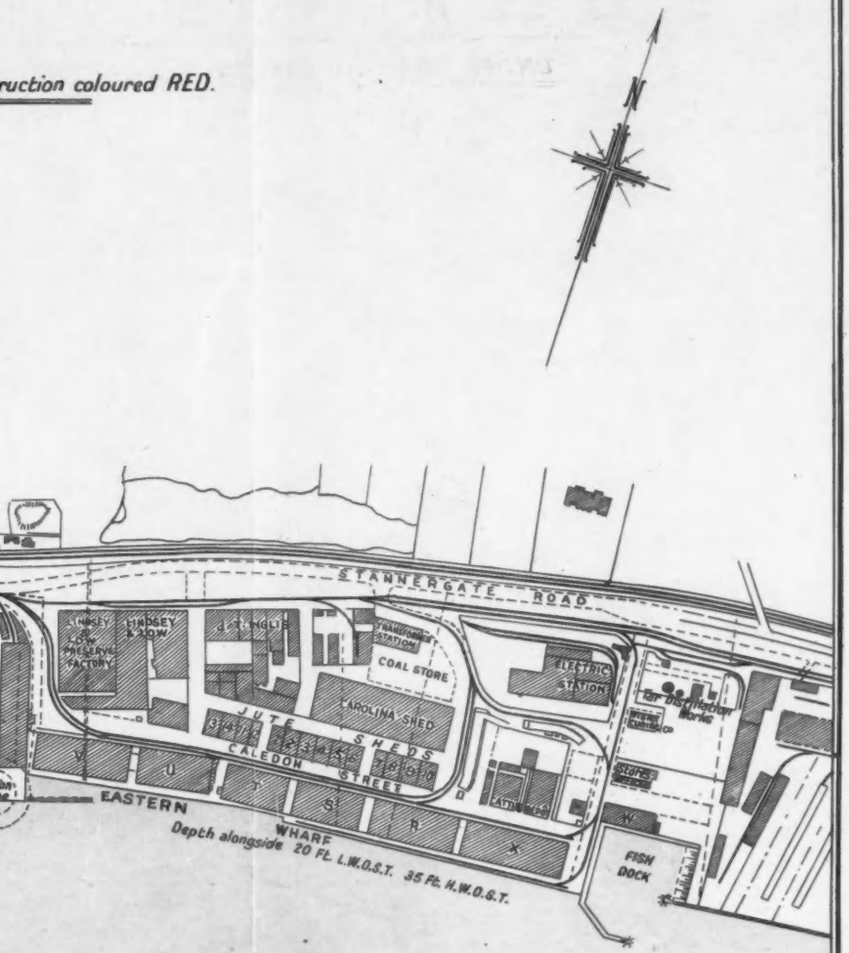
NOTE.—The Patent Slip which has a lifting power of 500 tons, has a draft on keel blocks at H.W.O.S.T. of 7'. 9" forward and 15'. 6" aft.

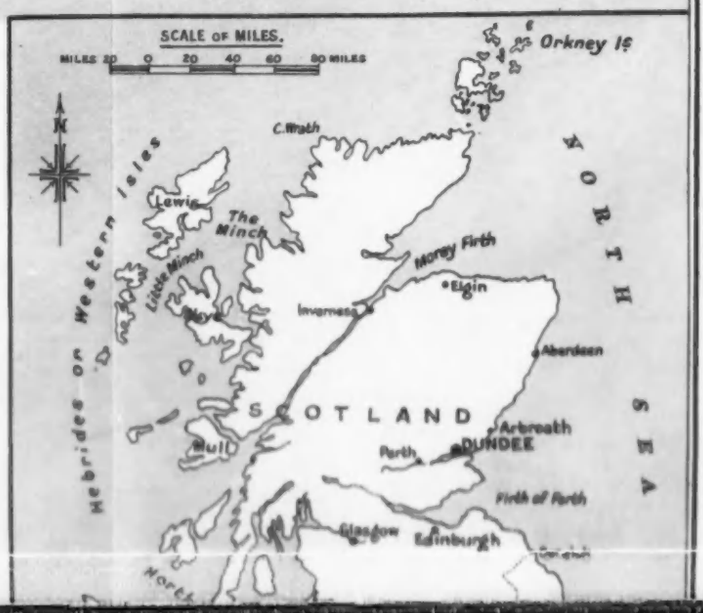
WHARVES OUTSIDE OF THE DOCKS AND HARBOURS.

NAME	Length in Feet	Depth at High Water alongside Wharf Ord. Springs Feet	Ord. Neaps Feet	Highest Springs Feet	Lowest Neaps Feet	Shed Accommodation in Sq. Yards	Cranes
Camperdown West Wharf	1000	34	31	35½	29	5300	Hyd. Jiggers
King George Wharf	885	37	34	38	32	16,380	5 & 3 ton Elect. Travelling Cranes
do "Ext. No 2	561						
Eastern Wharf - -	1790	35	32	36½	30	37,372	Hyd. Jiggers
Totals	3,675					59,052	

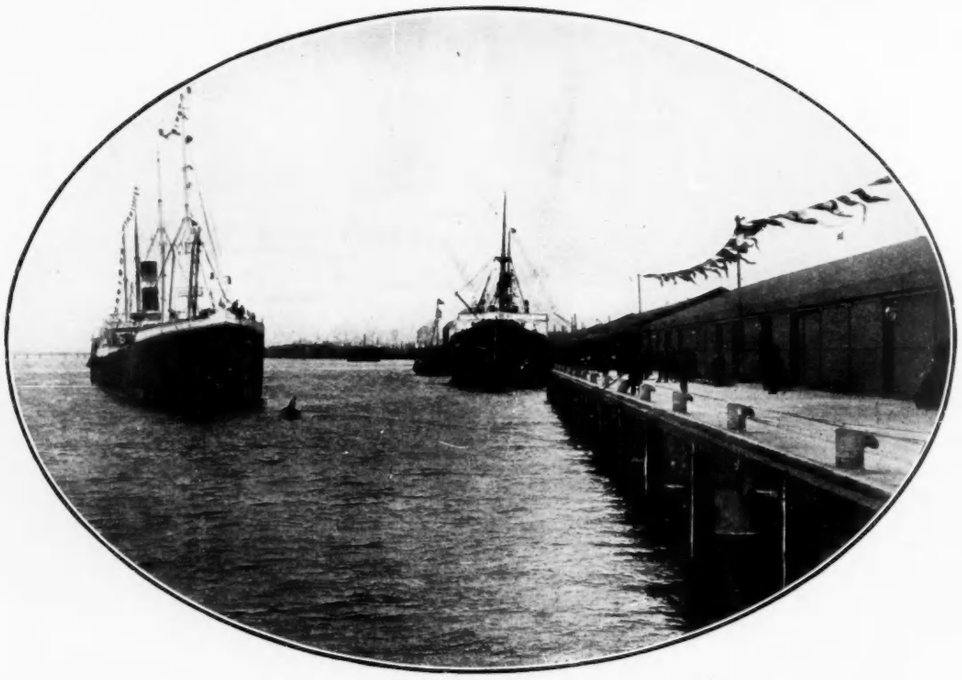
1932.

ruction coloured RED.





The Harbour of Dundee—continued



Opening of First Reinforced Concrete Section of Eastern Wharf, 1905.

Prior to 1815 the greatest quantity of flax and hemp imported in one year had been 3,000 tons, while in 1829 about 18,000 tons were brought into the port.

Between 1815 and 1830 the sum of £162,800 was expended on the harbour.

The following statement of shipping registered at the port is interesting:—

Vessels belonging to Dundee	Number	Registered Tonnage
In 1792	116	8,550
In 1824	165	17,945
In 1829	225	27,150
In 1833	284	35,473

An Act was passed in 1819 giving the Commissioners powers to carry out additional improvements, to borrow more money, and to revise the schedule of rates.

Photo. J. H. H. Thompson, Jnr.

90-ton Crane loading Coal.

Under the Act of 1815 the harbour was to revert to the town in 1836, but in August, 1829, the Harbour Commissioners came to the conclusion that a new Bill should be promoted, as the improvements effected had afforded such facilities as had enabled the merchants and manufacturers to treble the extent of their trade since 1815, and that, if the trade increased in the same ratio, additional extensions for shipping would be required. They agreed that "In preparing a Bill, the present schedule of shore dues should be altered so as to abolish for ever the antiquated, anti-commercial and inquisitorial practice of levying higher rates of shore dues from Unfreemen than from Freemen—a practice which, besides being unreasonable and improper, in itself had caused much trouble and some litigation in the collection of the shore dues."

The Town Council objected to the Bill, asserted that the harbour and its ancient dues were part of the Corporation Estate, protested against any of the revenue of the harbour being used for the promotion of the Bill, and presented a Bill of Suspension and Interdict. Traders and others voluntarily subscribed money to the amount of £1,816 15s. 4d., and guaranteed this sum to the Commissioners for the purpose of meeting the expense of the Bill. The Commissioners brought the Bill before Parliament, and on June 17th, 1830, the Royal Assent was given to the Act, which placed the harbour under trustees in perpetuity, the constitution being—the Provost, four Bailies, the Dean of Guild, and one Common Councillor, from the Town Council, five members of the Guildry, three persons from the Nine Incorporated Trades, one person from the Three United Trades, four persons possessed of landed property in the County of Forfar, and the Boxmaster of the Masters and Seamen Fraternity in Dundee (21 persons).

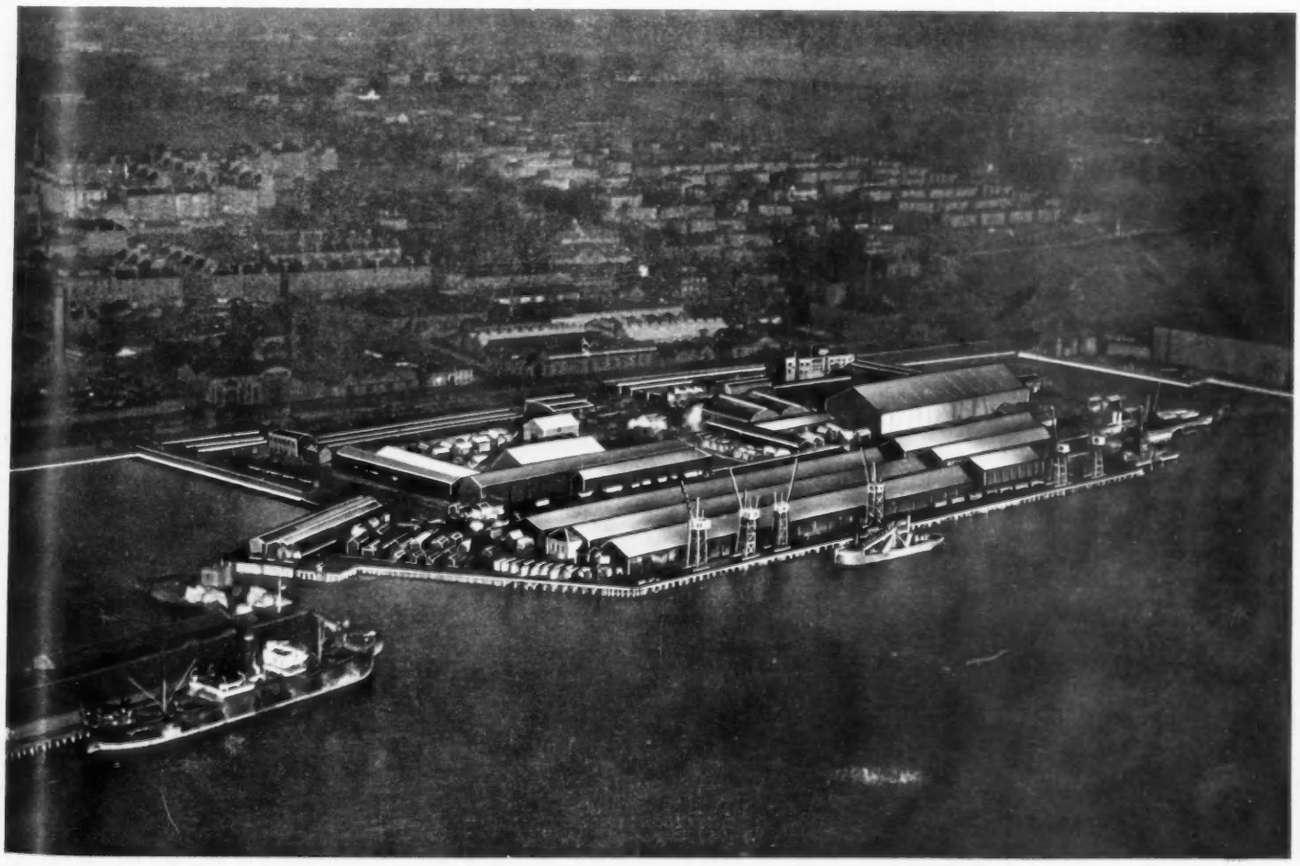
Prior to the 1830 Act, persons who were not burgesses had to pay 50 per cent. above the schedule rates, and 50 per cent. above the schedule was also charged in respect of vessels not registered at Dundee, but under the new Act there was no differentiation and all were charged equally.

Under the provisions of the Act, negotiations took place between the Town Council and the Harbour Trustees, and eventually £27,500 was agreed on as the purchase price of the harbour. Bonds to this amount were granted to the Town Council, and the Council signed a Discharge and Renunciation in favour of the Trustees on November 3rd, 1831. In 1838 the Trustees asked the Town Council to grant a Feudal Conveyance of the port and harbour, etc. After prolonged negotiations and legal action the Town Council granted a disposition, dated April 13th, 1841, in which the Council reserved the right to the Plack Dues, the Fish Customs, the Craig Pier or Craig Customs, the Town Clerk's Dues, and the Duty on Coal, which they had been in use to levy as Patrons of the Kirk Fabric Fund and the Hospital of the Burgh. These duties, dues and customs, with the exception of the duty on coal, were discharged in 1900 on payment of £14,000 by the Trustees to the Council.

About the time the Trust was constituted great national and civic problems were being dealt with, and the trade of the country was beginning to recover from the effects of the Napoleonic Wars. During these wars large quantities of canvas and

The Harbour of Dundee

East End of Harbour, shewing Transit Sheds and Warehouses. Photo D. C. Thomson & Co., Ltd.



Aerial View of King George V. Wharf. Photo by Aerofilms, Ltd.

The Harbour of Dundee—continued

coarse bagging were made in Dundee and exported, and a considerable transport service was engaged in. On the termination of the wars the employment of transports ceased, and merchants and manufacturers saw that they must employ larger vessels for longer voyages and seek more distant connections.

The advent of steam power had also brought about changes, and home industry was being superseded by the factory system.

Under changed conditions, the trade at the harbour increased even more rapidly than before, and to cope with the increase the Trustees decided on a scheme of dock extension.

A public demonstration—on the largest scale ever seen in Dundee—took place on August 9th, 1832. It was called the "Reform Jubilee," and after assembling on the Magdalen Green the people marched to the docks and saw the foundation stone of the Earl Grey Dock laid. A silver plate was set into the stone to commemorate the occasion, and on the plate was an inscription which stated, among other things, that the harbour and its revenues were now vested for ever in Trustees.

In November, 1834, the Earl Grey Dock was opened, and thereafter the harbour works were gradually extended to the East. Steady progress continued to be made, and the work of embanking and filling in was carried on.

In 1824 a few bales of jute were sent from India to Mr. Anderson, a linen manufacturer in Dundee, who made numerous experiments with it, but with little success. Mr. Thomas Neish also made experiments with the new fibre, but he also failed to obtain the results desired. In 1835, however, a fine yarn of pure jute was produced, and thus was begun a new industry, which was destined to have far-reaching effects on Dundee.

Jute in Transit Shed. Photo. J. H. H. Thompson, Jnr.

In 1838 the total quantity of raw jute imported was 1,136 tons, but the industry developed rapidly, and for many years it has been the staple trade of the city. The annual importation of jute is now about 1,200,000 bales (240,000 tons).

Other Harbour Acts were passed in 1836 and 1843 empowering the Trustees to construct new works, improve the accesses to the harbour and provide new accesses, lay down rails, make by-laws, and borrow additional money, etc.

In 1840 the Secretary of Her Majesty's Customs acquired ground on the south side of Dock Street to be used as a site for a new Custom House. At the same time, the Trustees agreed to erect a Board Room and offices immediately to the east thereof, and the Government and the Trustees made arrangements whereby the buildings of both parties should be built to plans of the same design and elevation, and the work of both should proceed simultaneously. In 1841 contracts were entered into, both contracts being placed with the same contractor. On June 9th, 1841, the foundation stone was laid, and there was deposited in the stone an inscribed plate, and also glass jars containing various gold, silver and copper coins of the realm, lists of harbour trustees and other public bodies in Dundee, minutes and other records of the Trustees, and copies of various publications. The inscription on the plate and the contents of the jars are set forth in detail in the minutes of the Trustees.

This building of handsome design, with a portico in the Roman Doric style, was finished in 1843, and provided accommodation for the Customs and Excise and the Harbour Trustees.

In 1881 it was reported that it would be necessary to provide additional accommodation for the Harbour Treasurer's Department. An extension of the eastern part of the Trustee's portion of the building was agreed upon, and advantage was taken of this extension to provide a more suitable Board Room for the Trustees. This work was completed in 1884.

In 1844 Queen Victoria came to Dundee by sea. It was her intention to spend some time in the Highlands, particularly at Blair Castle, the residence of the Duke of Atholl, and she, with Prince Albert, and the Princess Royal, arrived on the evening of September 10th, 1844, and the Royal yacht "Victoria and Albert" was anchored in the Queen's Roads. Early next morning the Royal party landed and were received by county and town notabilities. The party traversed the road along the Mid Quay (afterwards named the Queen's Quay), and, passing under a triumphal arch erected on the north end of the quay, drove through some of the principal streets. Great preparations had been made for the visit, and the Royal party was accorded a most enthusiastic reception by the inhabitants of Dundee.

On October 1st the Queen and Prince Albert left Blair Castle on their return journey and, passing through Dundee, embarked on the Royal yacht.

A proposal that a permanent memorial of this memorable visit should be erected met with general approval. The Harbour Trustees took up the matter and expressed the opinion that it was consistent "with their public duty to erect or aid, by a contribution, in the erection of a Triumphal Arch on the Harbour Property, which, while it may serve to commemorate the loyalty and attachment to Her Most Gracious Majesty manifested by the entire body of inhabitants on the occasion of Her Majesty's landing at the Port of Dundee, will also contribute to the utility and becoming embellishment of the Harbour Works." The Trustees agreed to give the sum of £500 out of the harbour funds, besides bringing up, at their own expense, the foundations of the Arch to the level of the quays, reserving to themselves, however, the sole power of fixing on the site for the building. They further declared "that voluntary subscriptions towards the cost thereof, will be accepted by the Trustees upon the express conditions only, that the said Arch shall be constructed according to a plan, working drawings, and specifications to be prepared by Mr. Leslie, harbour engineer, and approved of by the Trustees; and that the said Arch shall, when built, be the property and under the control of the Harbour Trustees for the time, in the same manner as the other portions of the harbour works."

The Arch was completed in 1850 and cost about £3,000.

In 1848 the harbour and docks consisted of what are known as the Old or West Docks, the Patent Slip, and the Marine Parade, behind which were established all the shipbuilding yards. An Eastern Tidal Harbour had been built, and rough protection walls had been placed round Victoria Dock, which was then a shallow basin.

The Trustees obtained further borrowing powers under their Act of 1856, and in 1857 the work of constructing Camperdown Dock was begun. Soon after the contractors commenced operations differences arose between them and the Trustees, and an acute stage was reached when, in October, 1861, the east wall of the dock fell in. A lawsuit followed, and ultimately the Trustees completed the work themselves. The dock, which cost about £100,000, was opened on July 20th, 1865.

The total tonnage at the port increased from 262,111 in 1856 to 395,260 in 1866, and the importation of jute increased from 9,048 tons in 1855 to 48,141 tons in 1866. With this influx in traffic, and the prospect of a steady increase, the Trustees had to consider the provision of additional facilities. Plans were prepared by Mr. Charles Ower with a view to a new wet dock and a new dry dock to the east of Camperdown Dock, but ultimately a modified scheme was decided upon, and in 1869 an Act was passed authorising the Trustees to construct a tidal basin and entrance to the Camperdown Dock; to extend and alter the river walls; to construct a sea wall to the Stannergate; to construct a graving dock between Camperdown Dock and Victoria Dock; to deepen and complete Victoria Dock; to reclaim and use for harbour purposes the ground lying to the south of the railway from Camperdown Dock to Stannergate Point, etc., etc. The Act also altered the representation on the Trust, which became constituted as follows: The Provost, four Bailies, the Dean of Guild, and the Boxmaster of the Fraternity of Masters and Seamen in Dundee, became ex-officio members, and there were elected annually one common councillor by the Town Council, five members by the Guildry Incorporation, three members by the Nine Incorporated Trades, one member by the Three United Trades, four members by the Commissioners of Supply for the County of Forfar, three members of the Chamber of Commerce, three members by the shipowners of Dundee,

(continued overleaf)

The Harbour of Dundee—continued

Adjoining the wharf there are three sheds, 300-ft., 240-ft., and 299-ft. in length respectively, and all 180-ft. in width. One of the sheds is fitted out with overhead electric travelling cranes, while along the whole length of the wharf there are railways and electric capstans for the haulage of wagons. On the wharf there are electric travelling cranes of 5-tons and 3-tons lifting capacity, all fitted with grabs for coaling purposes. The total cost of the wharf and equipment was about £225,000.

In 1927 His Majesty the King graciously consented to the wharf being named the "King George V. Wharf."

More than once the Trustees, in order to relieve unemployment, have proceeded with extension works sooner than they otherwise would have done and, keeping to that practice, they have, under the Government scheme for the relief of unemployment, entered upon another extension of the King George V. Wharf. A further length of about 560-ft. will be constructed, with shed accommodation, adequate roadways, rails, electric cranage, and other facilities, at an estimated cost of about £235,000.

The existing wharf and spacious sheds have already won high praise from experts, and when the whole scheme is completed it will be one of the finest wharves in the kingdom.

The King George V. Wharf was constructed by the Yorkshire Hennebique Contracting Co., Ltd., of Dundee and Leeds, who have also secured the contract for the final extension.

At the docks there are cranes of various types (the largest having a lifting capacity of 90 tons) and other appliances, and the harbour is admirably served with railways.

The town and the harbour of Dundee were linked up with railway systems at an earlier date than were many ports of greater size, and serving a much larger population. The Dundee and Newtyle Line (one of the first railways in the country), was opened in 1830, and soon after its completion a connection was made to the docks from the station in Ward Road. The Dundee and Arbroath Railway was opened in 1838, with a station at Carolina Port. In 1840 the work of embanking had been completed, and the line brought to a point just opposite Trades Lane. The Dundee and Perth Railway was constructed in 1846. On the opening of the first Tay Bridge in 1878 the North British Railway Company was able to carry traffic between Dundee and the South by a direct line, instead of by the ferry between Broughty Ferry and Tayport; and by the Dundee and Arbroath Joint Line Act, 1879, the company was enabled to construct a tunnel under Dock Street, and so connect its system with the Arbroath Line.

Railway Lines were laid along the quays of King William IV. and Earl Grey Docks, and these were gradually extended, keeping pace with the growth of the harbour. Every part of the harbour was linked up, and by special arrangements certain tenants were provided with private sidings into their premises. There are now about 14 miles of railways belonging to the Trustees, and these are worked by the railway companies under an agreement.

For several years prior to the war, Dundee was an important naval base and air station, but owing to the reduction of armaments the base and air station have been taken away and the ground space and buildings used for harbour and industrial purposes.

The principal electricity station for Dundee is situated on the Harbour Estate, and this ensures a ready and sufficient supply of current for all purposes.

The manufacture of jute cloth is the staple industry of the city, and the raw material for this trade, flax, and timber form the principal imports. In addition to these specialities, there is a large general trade done at the harbour. Among the other principal items imported are flour, sugar, grain, esparto grass, cement, iron, building materials, bleaching materials, chemical manures, seeds for crushing, and agricultural feeding stuffs; while the exports—chiefly coastwise and to countries on the Continent—include raw jute, jute cloth, bags and sacks, yarn, linen goods, machinery, whisky, preserves, paper, potatoes, linoleum, etc. There are regular sailings to New York.

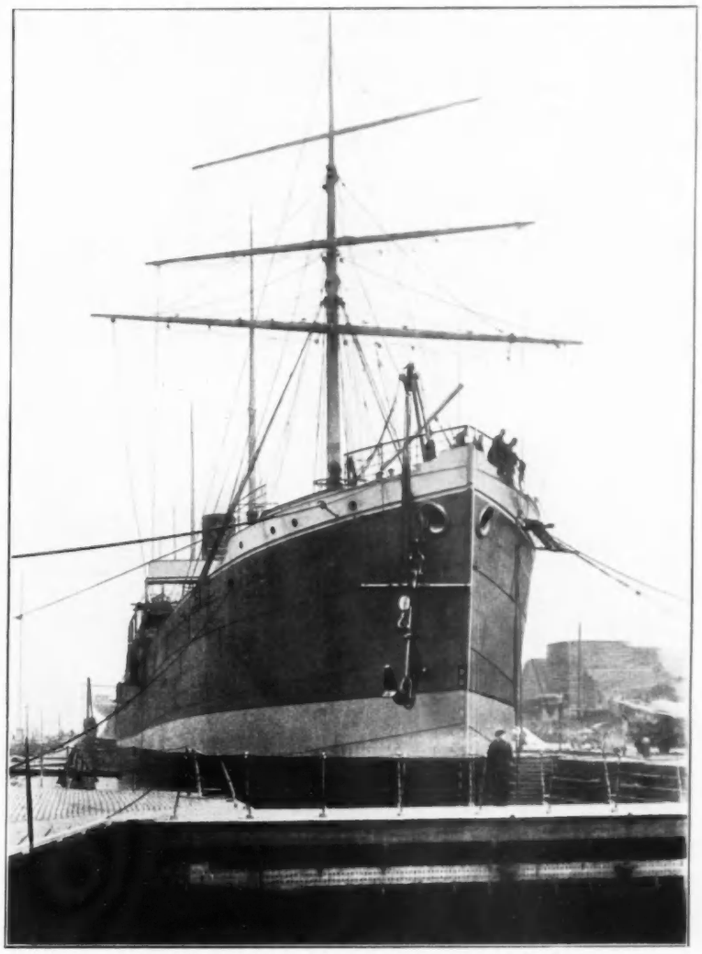
Unfortunately, Dundee has hitherto been mainly an import harbour, although every facility is provided for the export trade and the Trustees are ready to foster this side of traffic.

Until a few years ago the Arctic whaling and sealing industry was a business of particular interest to Dundee. There was, at one time, a large fleet of vessels which sailed yearly from Dundee to prosecute the Greenland seal and Davis Straits whale fishings, but owing to unremunerative voyages and the growth of the Antartic whale fishing, this business was given up some time ago.

It is not possible to trace the beginning of the shipbuilding industry in Dundee, but it is quite evident it has been carried on for a very long period. The following is an extract from "A Statistical Account of the Parish and Town of Dundee, in the year 1792," by Robert Small, D.D.:—"Shipbuilding is supposed to be executed here with great advantage and ingenuity. In it two masters are employed, with 31 journeymen and apprentices, and six are employed by two persons who build boats."

When the West Docks were constructed and Dock Street formed, a shipbuilding yard and a private graving dock had to be closed. Shipyards were opened near the Patent Slip and to the south of Victoria Dock, and between 1850 and 1860 there were seven or eight yards. Although the names of some of the shipbuilders of that time are almost forgotten, the names of others, particularly those of Messrs. Stephen, Brown and Simpson, Gourlay, Thompson, and Pearce, are still familiar to those who have had a fairly long acquaintance with shipping.

Messrs. Stephen and the Dundee Shipbuilding Co., Ltd., for many years specialised in the building of wooden vessels for the whale and seal fishing. Some of the ships built at Dundee have been used by expeditionary parties in the exploration of the Arctic and the Antarctic, the most notable being the "Discovery," which was built in 1901 by the Dundee Shipbuilding Co., Ltd., for the Antarctic Expedition led by Captain Scott.



S.S. "Marwarri" (5,687 tons) in East Graving Dock.

As the size of vessels increased, the majority of the shipbuilders moved further East in order to obtain greater length of slipways.

About sixty years ago Messrs. Gourlay Bros. and Co., Ltd., and Mr. W. B. Thompson were building what were then considered large vessels, and, keeping abreast with the times, they extended their shipyards, when necessary, in order to cope with the ever-increasing size of ships.

Messrs. Gourlay gave up their shipyard and closed their engineering works about 20 years ago.

In the year 1896 Mr. W. B. Thompson sold his shipyard, boiler shop and engine works to Mr. P. S. Brown and Mr. James Tawse, who then formed the Caledon Shipbuilding and Engineering Co., Ltd., and they appointed Mr. W. B. Thompson and Mr. Grant Barclay as joint managing directors. Mr. P. S. Brown became the first chairman of the company, and still holds that position.

In 1917 a large area of ground at the harbour became avail-

The Harbour of Dundee—continued

able for industrial purposes, and the Caledon Company took advantage of this opportunity and leased about 20 acres, which they used as the site for what is now known as the Stannergate Shipyard. This enterprise enabled the company to plan and lay out their new shipyard, which is conceived on the most up-to-date lines, and now holds a very high place among the principal shipbuilding concerns in the United Kingdom.

The vessels built by this firm have been famous for their reliability, and the company continues to build vessels of the very highest type.

Amongst the principal companies for whom they have constructed vessels are: Messrs. Alfred Holt and Co., Liverpool; The Leyland Line, of Liverpool; and N. V. Stoomvaart Maatschappij "Nederland," whose vessels are acknowledged to be amongst the highest class cargo freighters afloat. They have constructed passenger vessels for the Booth Line, of Liverpool, and the entire fleet of the Yeoward Line, of Liverpool, who carry on an extensive passenger and fruit trade with the Canaries.

Hydraulic Jigger and Jute in Transit Shed.

They have also built 29 first-class cargo and passenger vessels for the Clyde Shipping Company of Glasgow, and in recent years have built many first-class oil tankers.

In addition to larger types of vessels, the Caledon Company have continued to build smaller vessels of very special types, and recent examples are the well-known Wallasey ferry steamers, the Tay ferries steamers, and paddle steamers for the Southern Railway Company.

The products of this company are also well known in the Far East.

Recently the Caledon Company extended their Stannergate Shipyard in order to concentrate all their building in the one place, and they have been able to give up to the Harbour Trustees a large portion of the old Caledon Yard, including the slipways, to enable them to extend the King George V. Wharf, but they still retain the boiler and other shops, and the fitting-out jetty, on which they have erected a large electric crane capable of lifting up to 150 tons.

In addition to the shipyards, the Caledon Company owns extensive engineering works in the city, known as the Lilybank Engineering Works, and the engines constructed there are noted for their excellence.

Although the Caledon Company is now the only shipbuilding concern on the River Tay, they continue to keep the river in the forefront of the world's shipbuilding.

Dundee Harbour is still capable of great extension, and the Harbour Trustees will take advantage of every opportunity to further extend their estate and facilities.

Tay Ferries

The ferries between Newport, Woodhaven and Balmerino on the South side, and Dundee on the North side of the River Tay, were from ancient times used as parts of lines of communication between the capital of Scotland and the Northern parts of the Kingdom. The ferries were under the control and management of the Justices of the Peace and Commissioners of Supply of the counties of Forfar and Fife, under the Acts of the Scottish Parliament, 1617, c.8.; 1669, c.16.; and 1686, c.8.

About 1815 these ferries were worked by 25 sail boats, the boat owners being licensed by Lord Douglas, who had by his titles a right to the passage of "the water of Tay at Dundee, commonly called the Ferry-boat Duty at Dundee."

A melancholy accident occurred on Sunday, May 28th, 1815, whereby the pinnace "Nelson," one of the ferry boats, was upset and 19 persons were drowned. The "Nelson," with 25 passengers, many of whom were going to Kilmany Church to hear Dr. Chalmers preach his farewell sermon before he left for Glasgow, left Craig Pier when a gale was blowing. When near the Fife shore the helmsman left his post to take in a reef, the boat swung round, was caught in the gale, heeled over, and shipped so much water that she sank immediately. This accident directed public attention to the working of the ferries, and in 1817 the counties of Fife and Forfar appointed a joint committee to consider the state of the ferries and to concert measures for improvement.

Mr. Robert Stevenson, C.E., was asked by the joint committee to report on the ferries, and he suggested that the piers at Newport and Dundee should have the first attention and be improved, and that the matter of subsidiary piers and landing places at Woodhaven, etc., should be delayed until it was seen how the steamboats, which were then coming into use, would work at the ferries. In the meantime, the controlling body reduced the number of boats from 25 to 8, but, notwithstanding, maintained a good and regular service.

There was then no convenient means of transporting cattle, horses, or carriages across the river, and this could only be done at certain times of the tide and in fine weather. This state of matters obtained until 1821, when a double or twin steam vessel named the "Union" began to ply between Dundee and Newport and Dundee and Woodhaven. Great inconvenience was felt in making the passage to Woodhaven, chiefly by reason of the sand banks, and, frequent complaints having been made as to this, the Trustees directed in July, 1822, that the steamer should call at Newport only.

Mr. Stevenson's report was the basis of the 1819 Act, which *inter alia* provided that not only the Justices of Peace and Commissioners of Supply of Fife and Forfar, but also the Chief Baron of the Exchequer, the Lord President, the Lord Justice Clerk, the Lord Chief Commissioner of the Jury Court, the Lord Advocate, the Solicitor General, the Commander of the Forces in North Britain, the Sheriffs of Forfar and Fife, and the Provost of Dundee, as well as five gentlemen to be chosen by persons who should subscribe £50 or upwards for the purpose of the Act, were to be constituted Trustees of the ferries, Lord Douglas being paid £13 10s. per annum for his rights of ferry-boat duty at Dundee.

The revenue of the Trustees being insufficient to maintain the two lines of ferry and to execute the works prescribed by the Parliamentary plans furnished by Mr. Stevenson, Mr. Thomas Telford, C.E., was asked to report as to a sole landing place on the Fife side of the Tay. He submitted two reports, recommending in both a "pier in the vicinity of Newport," and estimated the cost at about £6,500. A Bill to carry out the improvements recommended by Mr. Telford and to borrow additional money was passed in 1822.

No sooner did the new Act come into operation than the ferry Trustees began the construction of the new pier at Newport and discontinued the Woodhaven Ferry.

A second twin steamer, the "George IV.," was put on the service in 1823, and this vessel was fitted with reversing gear invented by Mr. James Carmichael, of Dundee.

The twin steamers had two separate hulls, with a huge paddle wheel which revolved between them.

The Harbour of Dundee—continued

The Act of 1819 authorised the Trustees to borrow £20,000, and this amount was promised, but the subscribers, finding that the undertaking was not likely to be profitable, subscribed only £7,000. To carry on the undertaking the Trustees overdrew their account with the Dundee Banking Company. The Act of 1822 authorised the Trustees to borrow £25,000, being £5,000 additional. In 1823 the Act, 4, George IV., c.88, was passed, authorising the Exchequer Loan Commissioners to advance to the ferry Trustees any sum not exceeding £25,000. Thereafter the Trustees borrowed from the Public Works Loan Commissioners a sum of £18,000, and subsequently a further sum of £7,000, making altogether the £25,000 authorised to be borrowed. The interest on the mortgages in favour of the Exchequer Loan Commissioners was paid by the Trustees up to and including the year 1839, but afterwards fell into arrears. In consequence the Exchequer Loan Commissioners took possession of the ferries, under their mortgages, in 1842. In 1843 the Commissioners passed a Bill which was declared to continue in force for 31 years.

In July, 1845, the Edinburgh and Northern Railway Company was incorporated for the purpose of making a railway through Fife to Newport, and at the same time the Scottish Central Railway Company was incorporated for the purpose of making a railway from Perth, by Stirling, to join the Edinburgh and Glasgow Railway. Neither company had the power to purchase or acquire the Tay Ferries, but both companies, immediately on incorporation, endeavoured to do this. Three months later the Dundee Banking Company, acting on instructions, purchased the ferries from the Exchequer Loan Commissioners for £27,500, but it was not until 1860, fifteen years afterwards, that the Scottish Central Railway Company, although all along the real purchasers, took the formal title out of the Dundee Bank. In 1865 the Scottish Central Railway Company amalgamated with the Caledonian Railway Company, and in 1870 the Caledonian Railway Company promoted a Bill in Parliament for vesting in them the ferries, then under their management, and for continuing the term of the Acts relating thereto. This Bill was opposed by the Harbour Trustees and failed to pass.

King George V. Wharf and Electric Cranes. Photo. Watt & Sons

In December, 1872, an agreement (Schedule A of "the Dundee Harbour and Tay Ferries Act, 1873") was entered into between the Dundee Harbour Trustees and the Caledonian Railway Company, and in terms of that agreement a Bill was promoted and passed in 1873, whereby the Tay Ferries were transferred to and vested in the Trustees of the Harbour of Dundee, the Trustees paying the Caledonian Railway Company the sum of £20,000 for their whole rights, interests and property in the Tay Ferries.

The Tay Ferries Act, 1873, came into force on November 11th, 1873. By it, the Harbour Trustees took possession of the right of ferries and passages across the Tay Ferries between Newport and Woodhaven and Dundee, "and the right of ferry and right of ferry harbours and landing places at Dundee, Newport and Woodhaven respectively, and the right of ferry along the coast between Ferry-Port-on-Craig and Balmerino on the South, and from Broughty Castle to Invergowrie Burn on the North (exclusive of Ferry-Port-on-Craig, Broughty Castle, and Balmerino), and the power of regulating, and the jurisdiction over all ferries along the said lines of coast on both sides of the River Tay (exclusive of Ferry-Port-on-Craig and Broughty Castle), and also over Balmerino, with the whole powers and privileges necessary or appertaining thereto, with the harbours, piers, jetties, landing places, houses, buildings, lands, roads, accesses, and other works and conveniences constructed or acquired by or vested in the Tay Ferry Trustees, or

The Harbour of Dundee—continued

in the Caledonian Railway Company or their predecessors as mortgagees or creditors in possession, under the provisions of the Tay Ferries Acts."

On taking over the Tay Ferries the Trustees set about improving the service. Improvements were effected at Craig Pier and Newport Pier, and a new steamer was built.

On the working of the first few years there was a small surplus, but the cost of bringing buildings and plant into a proper state of repair and the acquisition of a new steamer increased the debt, and consequently the capital charges. The opening of the Tay Bridge for railway traffic had a detrimental effect on the revenue, and soon there were annual deficits. The Trustees obtained power in their Act of 1889 to transfer to and make chargeable against the harbour undertaking, other than the Tay Ferries, the £20,000 originally paid for the ferries. Despite this relief, there were further deficits, which were met by the harbour, and it was not until motor traffic had developed that the revenue became sufficient to meet the expenditure.

With the growth of the new traffic there came a need for further facilities, and in 1913-14 the Trustees extended the Craig Pier at a cost of £4,200.

To relieve congestion of traffic at Newport Pier, the Trustees, in 1926, entered upon extensive works. The pier was widened and extended, and the accommodation for passengers greatly improved, at a cost of about £25,000. The pier was formally opened for traffic in September, 1928.

In 1910 a new steamer, the "Newport," was procured, and in 1924 another vessel, the "William High"—now the "Sir William High"—was built. By that time the ferries had become more prosperous and had begun to pay off the accrued deficiency which amounted to about £17,000. By 1927 the whole of the money advanced by the harbour to meet deficiencies had been paid back.

Vehicular traffic developed so rapidly that it was considered advisable to procure another steamer, and the p.s. "B. L. Nairn" was constructed at a cost of £26,000, and put on the passage on June 7th, 1929. This vessel is longer and broader than any of the other vessels belonging to the Tay Ferries, and can carry more and heavier vehicles.

These three steamers, specially constructed to suit the requirements of the ferries, are the only vessels now used, all the other steamers having been disposed of.

Formerly, one vessel was sufficient to cope with the ordinary traffic, the second boat being in use on Saturdays and holidays only. Now it is necessary to have two vessels on the passage every day, the number of daily sailings has been increased, and there is now a half-hourly service from morning till night all the year round.

The ferries are not worked for profit, but for the convenience of the public, and the rates charged compare very favourably with those of ferries elsewhere. Road transport is increasing, and every day large quantities of goods are carried from the North to the South side of the Tay, and *vice versa*. Haulage contractors have found that by using the ferry, instead of sending their vehicles by Perth, the saving in time and running costs more than compensates them for the charges made, and this traffic particularly is rapidly increasing.

At the moment, the affairs of the undertaking, financially and otherwise, are in a highly satisfactory state.

Statistics.

HARBOUR REVENUES—1830 to 1931.

	TAY FERRIES UNDERTAKING			HARBOUR UNDERTAKING			
	Interest on Funds £	Ordinary Revenue £	Total £	Interest on Funds £	Ordinary Revenue £	Total £	Gross Total £
1830 ...	—	—	—	—	12,051	12,051	12,051
1840 ...	—	—	—	—	17,066	17,066	17,066
1850 ...	—	—	—	—	22,894	22,894	22,894
1860 ...	—	—	—	—	24,677	24,677	24,677
1870 ...	—	—	—	—	33,476	33,476	33,476
1880 ...	82	7,377	7,459	13	51,711	51,724	59,183
1890 ...	335	6,061	6,396	175	58,441	58,616	65,012
1900 ...	210	6,884	7,094	513	60,230	60,743	67,837
1910 ...	205	7,352	7,557	840	76,202	77,042	84,599
1920 ...	204	13,339	13,543	1,810	147,243	149,053	162,596
1930 ...	587	25,427	26,014	3,027	136,776	139,803	165,817
1931 ...	847	26,682	27,529	3,727	115,276	119,003	146,532

CAPITAL EXPENDITURE.

Expended 1815-1931.

			Expended		Gross Amount Expended
			Tay Ferries £	Harbour £	£
1815 to 31st May,		1850 ...	—	376,863	376,863
1850	do.	1850 ...	—	26,445	26,445
1860	do.	1870 ...	—	135,431	135,431
1870	do.	1880 ...	42,764	327,408	370,172
1880	do.	1890 ...	2,485	117,063	119,548
1890	do.	1900 ...	633	156,303	156,936
1900	do.	1910 ...	41	88,751	88,792
1910	do.	1920 ...	4,412	158,711	163,123
1920	do.	1930 ...	69,526	192,462	261,988
1930	do.	1931 ...	575	66,593	67,168
			£120,436	£1,646,030	£1,766,466

LOAN DEBT.

	Tay Ferries £	Harbour £	Total £
1830	—	49,950	49,950
1840	—	230,194	230,194
1850	—	210,330	210,330
1860	—	164,063	164,063
1870	—	190,233	190,233
1880	44,289	391,198	435,487
1890	24,769	376,884	401,653
1900	20,645	427,659	448,304
1910	14,696	356,692	371,388
1920	19,697	380,236	399,933
1930	61,960	489,663	551,623
1931	61,065	552,803	613,868

INVESTED FUNDS.

	Tay Ferries £	Harbour £	Total £
1880	5,718	1,127	6,845
1890	9,565	6,076	15,641
1900	7,730	22,402	30,132
1910	3,324	23,311	26,635
1920	4,747	39,951	44,698
1930	18,028	78,216	96,244
1931	24,829	73,058	97,887

NUMBER AND TONNAGE OF VESSELS.

	Number	Net Register Tonnages
1830	2,478	182,512
1840	3,850	255,074
1850	3,815	299,048
1860	2,940	280,891
1870	2,380	357,225
1880	3,016	531,946
1890	2,844	630,491
1900	3,070	621,042
1910	4,085	786,405
1920	3,221	638,659
1930	3,095	1,026,671
1931	3,328	921,701

STATEMENT OF MOTOR TRAFFIC CARRIED ON TAY FERRIES STEAMERS—1914-1930.

Year ended 31st May	Motor Cars	Motor Vans	Motor Lorries	Charabancs	Motor Cycles	Motor Cycles & Sidecars
1914 ...	6,701	455	61	6	2,427	1,499
1915 ...	6,238	648	824	15	3,135	1,513
1916 ...	5,460	959	900	2	2,333	1,606
1917 ...	3,859	946	389	2	1,552	1,131
1918 ...	2,978	731	443	—	1,023	954
1919 ...	3,249	1,049	407	—	803	1,066
1920 ...	8,598	1,309	1,979	29	3,904	3,768
1921 ...	11,385	2,143	2,655	108	5,727	4,244
1922 ...	11,860	2,944	3,970	46	5,369	3,952
1923 ...	13,704	2,987	4,710	89	5,226	3,822
1924 ...	15,773	3,255	5,819	105	5,290	3,449
1925 ...	19,452	3,809	6,955	121	5,847	3,540
1926 ...	23,313	4,521	7,025	150	7,099	3,397
1927 ...	27,579	4,915	7,879	227	9,021	3,124
1928 ...	30,048	5,054	8,393	222	8,019	2,632
1929 ...	31,336	5,292	9,017	302	8,359	2,127
1930 ...	38,323	5,681	14,330	252	8,083	1,902
1931 ...	38,654	5,503	19,047	183	7,012	1,672

Traffic at Santa Fe in 1931

According to official statistics just issued in Santa Fe imports at that port in 1931 totalled only 202,387 tons, as compared with 387,331 tons in 1930, showing also a decrease on the figures for the years 1913, 1927, 1928 and 1929, in which latter year importation reached its zenith for this port at about 400,000 tons.

The 202,387 tons imported arrived in 117 foreign-going ships. They consisted, as to more than one-third (viz., 75,000 tons), of goods from Great Britain. The United States came second with 35,005 tons, then Mexico 25,568 tons, Belgium 18,841 tons, and Germany 11,225 tons, the remainder being split up in insignificant proportions. The principal articles imported were:

	Tons
Coal	74,031
Naptha	35,779
Various Timber	23,255
Cement	21,408
Iron	15,859
Kerosene	8,273
Railway Material	6,974
Gravel	4,150

One hundred and thirty-seven different importing firms received these goods, 80 operating locally, 21 established at Buenos Aires and Rosario, the remaining 36 being distributed over the Province of Sante Fe. The foregoing relates to imports from abroad only.

The Port of New York

Latest Data issued by the Bureau of Commerce

Value of Foreign Trade at the Port of New York.

THE value of foreign trade at the Port of New York during the month of January, 1932, amounted to $109,839,000, as compared with $181,902,000 in the same month of 1931, a decline of 40 per cent. Exports were $44,389,000, a decline of 53 per cent. from the January, 1931, figure of $94,597,000, and imports dropped 25 per cent., from $87,305,000 in January, 1931, to $65,450,000 for January of this year.

	January		Net Change	
	1932	1931	Amount	Per Cent.
	$	$	$	
Exports	44,389,000	94,597,000	−50,208,000	−53.1
Imports	65,450,000	87,305,000	−21,855,000	−25.1
Exports and Imports	109,839,000	181,902,000	−72,063,000	−39.6

The foreign trade of the Port of New York and the United States began to decline in the closing months of 1929 and has fallen off in value steadily since that time, partly due to declining unit prices and partly due to shrinkage in physical volume of trade. A comparison of January, 1932, with January, 1930, makes clear the extent of the slump of both export and import which has taken place within the past two years.

	Exports		Imports	
	New York	United States	New York	United States
January, 1930 ...	158,656,000	410,848,000	152,814,000	310,968,000
January, 1932 ...	44,389,000	149,906,000	65,450,000	135,539,000

Foreign Trade Zones.

One method of stimulating use of American shipping and port facilities in the face of a dwindling foreign trade is the establishment of zones in which foreign merchandise may be landed for storage, cleaning, repacking and other manipulation prior to re-export or trans-shipment to foreign countries. This type of port is known as a foreign trade zone or free port, and is very common in European countries. The trade of Hamburg, Danzig, Copenhagen and other European ports is largely concentrated at the docks and warehouses within their free port zones. As yet no provision has been made to legalise the establishment of such zones in the United States.

The Port of New York is an important point of trans-shipment for goods moving between Canada and the West Indies in the Western Hemisphere, and Europe, Asia and Africa in the Eastern Hemisphere. By reason of joint steamship tariff arrangements it is possible to ship from the West Indies and points in South America to Europe via New York as cheaply as via the lines that operate direct between these countries. The service via New York is usually more frequent and superior as to type of vessel. Through the use of optional bills of lading it is possible for the shipper to send a consignment to New York and determine upon arrival how much he will trans-ship abroad.

The development of the trans-shipment and re-export business for the benefit of American ports and shipping, in the judgment of the United States Shipping Board, Department of Commerce, Tariff Commission and other expert bodies which have studied the subject, will be greatly facilitated by the setting up of foreign trade zones. Such zones would be legally outside of the customs territory of the United States and goods might be passed through them without the present burdensome customs formalities, involving use of bonded warehouses, or domestic entries followed by claims for "drawbacks" on re-exported goods. Such foreign trade zones will be fully policed to insure payment of duty on any of the merchandise brought through the customs barrier into the United States for sale.

No foreign trade zones can be established in the United States until such time as Congress shall authorize them by appropriate legislation. At the present time there are identical bills before both houses of Congress authorizing the establishment of foreign trade zones. One, S. 1676, introduced by Senator Jones of Washington, is now before the Commerce Committee of the Senate; the other, H.R. 9206, introduced by Representative Celler of New York, is before the Ways and Means Committee of the House. Another bill similar in principle but shorter in form, H.R. 4726, introduced by Representative Walsh, is also before the Ways and Means Committee.

The principle of foreign trade zones has been endorsed in the past by the U.S. Department of Commerce, U.S. Tariff Commission, U.S. Shipping Board, U.S. Chamber of Commerce, National Foreign Trade Council and American Association of Port Authorities and by numerous New York organizations, including the Merchants Association of New York, New York State Chamber of Commerce and Brooklyn Chamber of Commerce.

After careful study of the subject the Port of New York Authority also endorsed the principle of foreign trade zones and has recently asked the New York and New Jersey Senators and the Representatives of districts within the Port of New York to aid in expediting passage of this desirable legislation

Commerce at Port Newark.

The amount of lumber received at Port Newark by vessel during the month of February, 1932, was 15,305,000 board feet as compared with 20,510,000 board feet received in February, 1931, a decline of 25 per cent.

The inland shipments from Port Newark were 13,867,000 board feet, of which 6,249,000 feet moved by railroad car, and 7,618,000 feet moved by truck.

Receipts by vessel of cargo other than lumber amounted to 17,505 tons, a gain of 8,901 tons or 103 per cent. over the same month last year. Included in these receipts were 5,783 tons of potatoes from Maine, an increase of 95 per cent. over February, 1931, when 2,970 tons were received, and which were shipped from Canada.

Twenty-six steamers arrived at Port Newark during the month, compared with 22 in February, 1931.

Vessel Movements in Foreign Trade.

Entrances of vessels in foreign trade at the Port of New York during the month of February, 1932, exceeded those of the same month in 1931 but clearances fell off.

	February, 1932		February, 1931	
	No. of Vessels	Vessel Tonnage	No. of Vessels	Vessel Tonnage
Entrances ...	464	2,366,654	439	2,127,771
Clearances ...	454	2,287,879	484	2,261,468

Steamship Sailings.

During the past year, sailings to foreign countries have been drastically curtailed in a number of trades. Sailings to Italy and other Mediterranean ports, for instance, have been reduced from a total of 38 in February, 1931, to 14 in the same month of this year. Other routes, such as the French Atlantic, Baltic, African, Caribbean-Mexican, South American, and Far East trades have all been subjected to reductions, although not quite as severe as that of the Italian-Mediterranean services.

The bright spot is the big increase in foreign cruises from this port. Whereas, a year ago 13 of these were recorded for February, 31 were reported for the same month of this year, or an average of more than one a day. This phase of the steamship business is continually growing and now constitutes a very important factor in passenger revenues.

Very little change is reported in the domestic service from the port. Direct sailings to the Pacific Coast continue at a rate of 6 or more per week, or an average of one for each working day.

The peak day of the month was Saturday, February 27th, with a total of 82 departures. Of this total, 37 were in foreign service, including 2 to the United Kingdom, 3 to north European ports, 12 to Caribbean-Mexican ports, 3 to South America, 3 to the Far East, 1 to Australasia, 1 tanker, and 3 cruises. The 45 domestic sailings included 2 to the Pacific Coast, 9 to Atlantic and Gulf ports, 8 tankers and 5 coal carriers.

A Two-hour Turn-round in Port.

On March 17th, 1932, the Munson liner "Pan America" arrived at 9 a.m. and sailed out of the harbour again at 11 a.m. The "Pan America," inbound from Bermuda, docked at her pier 64 North River, at the foot of West 24th Street, a day late as a result of head winds and high seas encountered on the Atlantic. While passengers were being discharged on the pier, the fresh water tanks were refilled, 1,500 barrels of fuel oil piped in, outgoing passengers checked on board, and at 11 a.m. the vessel cast off for the trip back to Bermuda.

Steamship Passenger Traffic.

The United States Bureau of Immigration reports a total of 14,961 passengers arriving at New York from foreign ports during the month of January. This compares with 18,328 arriving during the same month last year. Arrivals of immigrant aliens are down to the lowest number ever recorded for the port—1,309 for the month of January and which is just half the number arriving at this time last year. On the other

The Port of New York—continued

hand, the outbound movement of emigrant aliens through this port has increased and continues at an approximate rate of 4,500 per month since the middle of last summer, double the number ordinarily reported for this class.

	January, 1932	January, 1931
INBOUND—		
Aliens, Immigrant	1,309	2,651
Aliens, Non-Immigrant	4,309	5,268
U.S. Citizens	9,343	10,409
Total ...	14,961	18,328
OUTBOUND—		
Aliens, Emigrant	4,108	2,535
Aliens, Non-Emigrant	10,590	12,609
U.S. Citizens	14,889	13,788
Total ...	29,587	28,932
Total Inbound and Outbound	44,548	47,260

Steamship Services.

The Navigazione Libera Triestina, which line operates a monthly freight service to the Italian ports of Genoa, Leghorn and Naples, has transferred its New York Terminal from Pier 8 to Pier 24, New York Dock, foot of Congress Street, Brooklyn.

The Spanish Transatlantic Line have inaugurated a monthly service between the Port of New York, Havana, and Santiago, Cuba. Two of the trans-Atlantic passenger vessels of this line will be used in the Cuban service.

Grain Exports.

The volume of grain exports, both domestic and Canadian, at the Port of New York during the month of January, 1932, compared with January, 1931, was as follows:

	January 1932 Bushels	January 1931 Bushels	Net Change Amount	Net Change Per Cent.
Domestic and Canadian Grain	2,343,000	5,529,000	—3,186,000	—57.7
Domestic Grain	421,000	42,000	+379,000	+902.4
Canadian Grain	1,922,000	5,487,000	—3,565,000	—64.7

Although December, 1931, and January, 1932, exports were less than the corresponding months a year ago, the total grain exports for the year 1931 showed an increase over 1930. During the year 1931 over 60 million bushels of grain were exported through the Port of New York, of which more than 40 million bushels were transported via the New York State Canal System. A large part of this was Canadian grain seeking an all winter outlet through the ice-free Port of New York. In normal times every vessel sailing to Europe from the Port of New York, with the exception of the super liners with permanent water ballast, carry some grain as "bottom cargo."

New York Favoured among Ports by its Natural Advantages.

The Port of New York has many natural advantages which make it attractive to shipping. Its safe, well protected harbour opens directly from the sea so that no lengthy navigation through restricted channels is necessary. This makes items like pilotage cost much less than at ports that are located a hundred miles or more up a river, as is the case at Philadelphia and New Orleans.

A second advantage is the natural deep water in the Upper Harbour and Hudson River which permits the development of the channels for 40-ft. ships by the dredging of comparatively limited stretches of connecting channels. The low cost to the Federal Treasury of maintaining the main ship channels in New York, compared to other leading ports, is shown in the following table:—

MAIN SHIP CHANNELS.

	Authorized Depth	Length	Annual Maintenance Cost 1931	Annual Export-Import Cargo Tonnage
New York	40-ft.	20 miles	$387,737	22,476,240
Philadelphia ...	35-ft.	101 miles	2,834,787	6,341,630
Baltimore	35-ft.	170 miles	300,351	6,436,962
New Orleans ...	35-ft.	114 miles	162,185	7,099,285

The Federal Government spends in New York Harbour only $387,737 to maintain a 40-ft. channel handling 22,476,240 tons of foreign trade but must spend seven times this sum to maintain a 35-ft. channel in Philadelphia for a tonnage only 28 per cent. as great.

A third natural advantage in the Port of New York is the small tidal range. The range of the rise and fall of tides at the Battery in New York Harbour is 5.3-ft. In European ports the rise and fall of tide is much greater. Liverpool 30-ft., Havre 24-ft., London 21-ft., Antwerp 16-ft., Southampton 13-ft., Bremerhaven 12-ft. In ports with an extreme range of tide shipping cannot use the simple pier system which obtains in New York but must be provided with docks or basins in which the water is impounded by lock gates in order to maintain a constant level for vessels engaged in loading and unloading cargo.

The fourth advantage to shipping in the Port of New York is the absence of strong tidal currents in the main ship channels. The strength of the current at midstream in the Hudson River is only 1½ knots on the flood tide and 2½ knots on the ebb. In Ambrose Channel, the main approach from the sea to New York Harbour, similar conditions prevail. In contrast many foreign ports have a tidal current two or three times as strong as that at New York: Antwerp, Liverpool, London, Southampton and Havre four to five knots, and Bremerhaven, three knots. The low velocity of currents in the main ship channels of New York Harbour permit easy manoeuvring of large vessels. Quick docking and undocking of ships is possible since few of the liners serving the Port of New York must wait for a favourable tidal stage to berth or sail.

The New York State Canal System.

According to the Annual Report of the Superintendent, Department of Public Works, State of New York, for the year 1931, the tonnage moved through the Erie Division of the New York State Canal System (Waterford to Buffalo) registered an increase of 8 per cent. over the preceding season's movement. The traffic of the season of 1931 through the Erie Division amounted to 3,277,936 tons, a gain of 233,665 tons over the 1930 figures of 3,044,271 tons. The traffic in the west-bound tonnage accounted for 54 per cent., and the east-bound movement 46 per cent. of the total.

While there was a falling off in certain bulk commodities such as sulphur, ore, sand, stone and gravel, other products made large gains. Sugar, for instance, jumped from 128,290 tons in 1930 to 303,973 tons during the last season. Iron and steel shipments increased from 134,644 tons to 200,268 tons. Petroleum products ranked second to grain in the tonnage moved over the Canal System, reaching the record figure of 889,476 tons, being a gain of 151,992 tons over the 1930 figure of 737,484 tons. The movement of heavy chemicals assumed considerable importance by increasing from 10,481 tons in 1930 to 122,311 tons during the last season. Due to the mild weather conditions which have prevailed throughout the winter, an early opening of the New York State Canal System is anticipated.

Notes from German Ports

Weser River Shipping in February.

No disturbances through ice took place in the Weser shipping in February. However, water levels on the Upper Weser were very unfavourable. From Hanover-Münden the draft depth fluctuated between 1.50 metre and 85 centimetres, while a good 2 metres are necessary for full loading of the smaller 1.85 metre draft barges.

In goods traffic through the Bremen Weser Lock during February 40,700 tons, against 66,200 tons in the previous month, went down-stream and 15,700, against 30,400 tons, up-stream. However, the quantities cannot be very well compared with one another, on account of water conditions closing the locks for several days.

Bremen's Seagoing Shipping Traffic in February.

As is the case every year, February showed particularly low sea-going traffic figures. Carrying capacity decreased from 666,200 net registered tons in January to 560,600 net registered tons, or by 15 per cent. In comparison with February, 1931, traffic showed a decrease of 2 per cent.

During the first two months of the year altogether 1,226,800 net registered tons arrived, against 1,301,300 net registered tons in the same period of the previous year. The traffic was thus 3 per cent. smaller.

In sea-borne goods traffic of the five most important Weser ports there was a decrease in imports compared with January; this was chiefly due to decreased grain imports. Imports amounted to 229,800 tons, a drop of 33,200 tons, equal to 13 per cent. On the other hand, exports with 131,600 tons exceeded those of the previous month by 2,300 tons, equal to 2 per cent. In comparison with February, 1931, imports were 7,100 tons higher, equal to 3 per cent., and exports by 8,900 tons, equal to 6 per cent. lower.

In the first two months of the year altogether 573,700 tons were imported and exported; that is 55,700 tons, equal to 6 per cent. less than in the same period of the previous year, and only about three-quarters of the goods carried in the months of January/February, 1930. Of the loss compared with 1931, 245,000 tons, equal to 4 per cent. fall to imports and 31,200 tons, or 11 per cent. to exports. Besides importation of ore and potash transport, piece goods traffic, both incoming and outgoing, has decreased.

Altogether 560,617 net registered tons arrived at and 584,698 net registered tons sailed from the five most important Weser ports during the month under review.

Italian Harbour Affairs

ACCORDING to statistics, which have just been published, among the main items of goods imported at the chief Italian ports during the two months January and February, 1932, there have been the following:—

	Coal Tons	Cereals Tons	Cotton Tons
Genoa	313,792	103,589	38,349
Savona	191,414	1,054	—
Leghorn	112,601	9,297	525
Civitavecchia ...	74,505	6,934	—
Naples	115,353	36,023	1,759
Palermo	14,769	220	—
Catania	7,871	7,843	—
*Trieste	527,760	189,833	46,876
Fiume	2,621	244	337
Venice	160,447	23,625	11,608
Ancona	23,993	10,481	—
Bari	31,808	7 503	—

*December 1931 and January 1932.

The Consiglio Provinciale dell'Economia (Chamber of Commerce and Industry) at Trieste has published the following figures regarding trade at that port during the month of March, 1932, and which are summarised as follows:—

	1932 (Centals)	1931
ARRIVALS.		
By rail	462,540	695,971
By sea	1,403,129	1,411,193
	1,865,669	2,107,164
CLEARANCES.		
By rail	728,969	1,104,093
By sea	440,205	510,221
	1,169,174	1,614,314
TOTAL.		
By rail	1,191,509	1,800,064
By sea	1,843,334	1,921,414
	3,034,843	3,721,478

It will be seen that both railway and maritime traffic has shown a decline, but while railway movement has shown a depression of 600,000 centals, maritime trade has shown a reduction of only 78,000 centals, which means that the Port of Trieste is dependent to a great extent on the difficult economic situation of Central Europe. Figures for the first quarter of 1932 fully confirm the above statements as is shown by the following figures:—

	JANUARY—MARCH 1932 Centals		1931 Centals
Total Traffic by Rail ...	3,580,703	...	4,773,378
Total Traffic by Sea ...	5,379,826	...	5,569,137
	8,960,599	...	10,342,515

In the course of the past few weeks there has been an important increase in the arrivals of wheat at Trieste from the Black Sea.

The question of dry-docking the 48,000 gross tons liner "Conte di Savoia" at Trieste, before her preliminary trials and the trip from Trieste to Genoa, is followed with the greatest interest by Italian shipbuilders and engineers, in view of the fact that there is no suitable dry dock for this purpose, except the Naval Dock at Venice, the breadth of which is such, however, that there will be only 90 contimetres to spare on both sides of the ship. The dry-docking of the "Conte di Savoia" will represent, therefore, a complicated engineering event.

According to statistics, which have been published by the Consorzio Autonomo del Porto di Genova shipping at that port during the first quarter of 1932 included the following items:—

	ARRIVALS No.	N.R.T.	Goods Tons	CLEARANCES No.	N.R.T.	Goods Tons
1932						
January ...	401	771,648	420,256	393	827,517	68,313
February ...	350	733,136	362,359	369	734,549	72,836
March ...	398	837,970	447,509	429	859,735	73,627
Total ...	1,149	2,342,754	1,230,124	1,191	2,421,801	214,776
Jan.-March 1931	1,236	2,563,284	1,495,663	1,209	2,555,803	219,953

From the above figures it appears that imports have dropped from January to February, but have increased in March, 1932. This increase has a particular importance taking into consideration the fact that it has reached 447,509 tons against 420,256 tons in January. During March, 1932, therefore, Genoese traffic has reached the highest figure. Exports, instead, have shown an upward tendency since January. The final results for the first quarter of 1932 a decline of 265,539 tons in imports (—113,525 tons in 1931) and a decline of 5,177 tons in exports (—49,771 tons in 1931). Imports have shown a larger decrease than exports, and this can be considered as a favourable result, in connection with the policy which has been adopted by the Italian Government in regard to foreign trade. A better idea of the situation may be had through the examination of the figures concerning the various items of imports into the Port of Genoa during the first quarter in 1932:—

	March Tons	February Tons	January Tons
Coal	187,882	120,268	193,755
Cereals	80,290	59,790	46,434
Cotton	18,144	13,779	24,570
Wool	8,556	5,981	6,199
Skins	1,306	1,458	2,248
Phosphates ...	3,974	1,582	1,800
Oil	29,406	26,480	39,635
Frozen Meats ...	1,756	1,427	1,354
Lumber	6,284	10,665	9,454
Other Goods ...	109,911	120,929	94,807
Total ...	447,509	362,359	420,256

The improvement, which has taken place during the month of March is due above all to larger arrivals of coal, cotton, wool, etc., which have shown an increased industrial activity in the country, and there is also a big increase in the import of cereals.

Another item of interest in connection with shipping at Genoa, during the first part of 1932, is the activity of the Alle Grazie Docks of the S.A. Ente Bacini, which is as follows:—

	March No.	Gross Tons	February No.	Gross Tons	January No.	Gross Tons
Steamers ...	37	221,880	42	209,205	42	252,820
Auxiliaries ...	2	950	—	—	1	392
Sailing Vessels	—	—	—	—	3	575
Various ...	5	491	2	200	7	705
	44	223,321	44	209,405	53	254,492

The activity of the Genoese dry docks has been fairly brisk, and this fact has considerable interest, as among this tonnage there have been several foreign ships.

The Consorzio Autonomo del Porto di Genova has issued further regulations regarding the unloading of wool and skins at the Ponte Assereto, and has again curtailed the tariffs and facilitated the unloading of general cargo, and the shipment of calcium nitrate. Furthermore, in the course of the last meeting of the Executive Board of the Consorzio Autonomo del Porto the charges concerning the unloading of scrap iron and steel from any country and salted skins from South America have been revised.

In regard to the situation of trade at Italian ports it may be interesting to examine the following figures regarding coal imported into the Port of Venice, from which it will be seen that the percentage of coal imports on general imports at the port of the lagoons has decreased since the war:—

	Coal Imported	Percentage of the Total Traffic	Total Shipping
1909	1,311,000	55.64	2,356,417
1910	1,254,000	53.69	2,335,443
1911	1,070,178	44.50	2,404,625
1912	1,150,738	45.96	2,503,764
1913	1,223,131	53.46	2,287,875
1919	623,235	51.95	1,199,599
1920	593,944	41.28	1,143,894
1921	668,136	43.17	1,547,590
1922	757,556	48.01	1,577,887
1923	861,305	46.55	1,850,346
1924	1,119,148	54.09	2,069,147
1925	793,915	43.21	1,837,231
1926	741,650	44.32	1,673,310
1927	1,128,342	52.34	2,155,608
1928	1,203,534	48.72	1,470,115
1929	1,337,072	51.72	2,585,350
1930	1,233,091	48.83	2,525,192
1931	1,161,363	49.97	2,323,981

In connection with the harbour improvements at Tripoli (Lybia), the General Bonded Stores are under construction, as well as the new Customs House Building. The old lighthouse built under the Turkish Government has been replaced by a new lighthouse with a range of 30 miles. It would appear that steps will be taken to build a new maritime passenger station in view of the increasing importance of Tripoli as a tourist centre. The fact that the largest liners have called at Tripoli this year with tourists on pleasure cruises has induced the Government to further increase the depth of water in the harbour, and a new dredge has been sent there with the object of improving the works under construction.

Admiral Alessandro Ciano, President of the Maritime Section of the Consiglio Provinciale dell'Economia (Chamber of Commerce and Industry) of Rome has recently visited the Port of Civitavecchia for the purpose of taking up with the local authorities the question of the organisation of that port. According to information received it woul appear that additional reductions are to be made in coal unloading charges and that facilities are to be increased.

Scottish Harbour Notes

The Development of Grangemouth.

IN an article that recently appeared in a local newspaper it is claimed that ever since the old Caledonian Railway Company took over the docks in the year 1867 (at which time there were only two docks) Grangemouth as a port had made continuous progress, until now it is one of the most important in Scotland and, as regards despatch, stands second to none in the Kingdom. The old Caledonian directors quickly saw the potentialities of the place, and in the year 1882 added the Carron Dock and in 1906 the Grange Dock, the latter being part of a far-seeing plan which renders further additions a matter of comparative simplicity. After the amalgamation of the railways the L.M.S. directors were not slow to recognise the possibilities of Grangemouth, and wisely followed the progressive policy pursued by their predecessors, and since the union they had greatly extended and improved the equipment with the view of keeping the facilities of the port in the very forefront of the line of progress.

"Within the last few years," this article proceeds, "the railway company have electrified the Carron Dock cranes, which have proved an immense boon to ships using the port. They have erected grab cranes, which is another labour-saving and most useful acquisition, while the 35-ton electric crane which is now almost constantly in operation is one of the most effective anti-breakers in the shipment of coal. There are still men alive who looked with wonder on the 30-ton coaling crane when it was first laid down, and with amazement when this was supplanted by hydraulic hoists—a most wonderful contrivance. Surely (they said) this is the last word in the coaling of vessels, but in these days of continuous progress and most astonishing inventions he would be a bold man who would write finale on any apparatus, no matter how wonderful and intricate; and so this last word in the coaling of vessels is found now to be out-of-date and, in a few days' time, there will be started in our port a new method which will entirely revolutionise the coal shipping as regards speed, anti-breakage and (not the least) economy."

Enquiry into Rates charged at Scottish Ports.

Under the Private Legislation Procedure (Scotland) Act, 1899, an important enquiry into the question of the rates charged at Scottish docks and harbours was recently held in Parliament House, Edinburgh, the enquiry being into a group of four orders, the first two of which were promoted by the London and North-Eastern Railway Company and the London, Midland and Scottish Railway Company to enable them to permanently stabilise increases temporarily permitted on the dues charged the coal traffic at the several railway docks in Scotland. Opposition was provided by the Scottish coal owners, and in addition petitions against the orders were also lodged by Edinburgh Corporation and by the County Councils of Fifeshire, Inverness-shire and Ayrshire in respect of increases proposed to be made in canal dues. The members of this Parliamentary Commission consisted of Lord Loch (Chairman), the Earl of Dalkeith, M.P., Mr. W. Martin Haddow (Glasgow), and Mr. Robert Murray (Renfrew), with the two last named being members of the extra Parliamentary panel.

At the outset of the proceedings Mr. T. M. Cooper, K.C.—who appeared for the London and North-Eastern Railway, whose order was taken first—urged that, unless sanction was given by the present order to the continuance in operation of the temporary order, the result would be that at the end of the present year the railway company would be regulated to the schedule of charges prescribed in pre-war days, with a result which could only be contemplated by those responsible with dismay. If the order was not passed (Mr. Cooper added) the railway company would be faced with a depletion of revenue which was bound to be attended with the most disastrous consequences so far as these docks were concerned. After hearing evidence, Lord Loch intimated that the Commission had decided that the preambles of the orders had not been proved.

Proposed Erection of New Light at Banff Harbour.

It was reported at a recently held meeting of Banff Harbour Trustees that further steps had been taken in the proposed erection of a new light at the harbour entrance to replace the present tripod structure which has become outworn, and plans were submitted by a firm of engineers who are specialists in work of the kind. These provided for a steel tower, but it was suggested that cast iron would be more durable and also that a triple mantle gas burner be used instead of a single-mantle one as specified. It was also proposed that the sectors of the lantern showing seawards should be of red glass, it being explained that this was desired by seafaring men because, with so many bright street lights in the town visible from the sea, it was often difficult to pick out the harbour light. Red sectors (it was further explained) were now being used at other harbours. The matter was remitted to a committee to obtain offers for the work and submit a recommendation to the Trust.

Portsoy Harbour transferred to Town Council.

In connection with the transfer of the local harbour from Portsoy Harbour Company to Portsoy Town Council, an extraordinary meeting of the shareholders of the company was recently held, at which the following resolutions were discussed and unanimously adopted: "That this meeting of Portsoy Harbour Company resolve that, owing to the impossibility from lack of funds of the company continuing to carry on the harbour of Portsoy, the arrangements for the transfer of the harbour and the management thereof to the Town Council of Portsoy be, and are hereby approved by; and, further, that this meeting resolve that the terms of the agreement (being the agreement schedule to the Provisional Order aftermentioned) between the company, the Trustees of the late Alexander Rainy, the Seafield Trustees, the North of Scotland Bank, and the Town Council of Portsoy be, and are, hereby approved of, and authorise the execution of said agreement on behalf of the company." The meeting also resolved that the terms of the provisional order proposed to be lodged with the Secretary of State for Scotland, entitled the "Portsoy Harbour Order, 1932," providing for the transfer of the Harbour of Portsoy to the Town Council of Portsoy, and for the dissolution of the Portsoy Harbour Company, be approved of.

Repairs at Helmsdale Harbour.

Sutherland County Council has considered communications from the Department of Agriculture in connection with the repair of the harbour at Helmsdale, which is expected to cost over £4,000. The Department were prepared to give 75 per cent. towards the proposed work provided the remainder of the sum required was guaranteed and the Council took over and maintained the structure after repairs were completed. Councillor A. M. Coupar—on behalf of the seafaring population of Sutherland's chief sea port—has given an undertaking to provide the remaining £700, and his generous and public-spirited action has taken the County Council out of the dilemma.

Dundee Harbour Trust.

It is announced that Dundee Harbour Trust are offering a commodious expanse of water and quays known as King William Dock. It occupies one of the most valuable sites in the centres of the city, and various uses for it have been suggested, including its conversion into a central garage or omnibus station. King William Dock is more than a century old. Its narrow lockway and limited depth were admirably suited for vessels of the windjammer class, but it has become obsolete and is useless for modern requirements. It has in recent years been used only for the laying-up of old vessels, many of which were subsequently scrapped. The late Mr. James Thomson (city engineer) prepared elaborate plans for the establishment of a large central railway station in this area, the scheme embracing the filling up of Earl Grey Dock, which adjoins King William Dock, but the scheme was not pursued.

South Pier at Oban to be Repaired.

Work has now commenced on the repair and renovation of the municipal South Pier at Oban (Argyllshire), and it is estimated that the total cost of this scheme will be £2,171. For some years past this pier has been in a somewhat dilapidated condition, and it was felt that the time was now opportune for putting the pier into proper order again. A large batch of workers have been engaged, and it is expected that the work will be completed by the end of the month of May in time for the summer tourists traffic. It was originally intended to reconstruct the South Pier at an estimated cost of £4,500 before the Government grant was withdrawn, but in the circumstances it was decided to proceed with a more modified scheme.

Port of Douglas, Isle of Man

The total number of passengers landed during the summer season 1931—May 1st to September 30th—was 117,797½, being a decrease of 35,551½ on the previous season.

The total number of passengers embarked and disembarked during the year ended September 30th, 1931, was 957,259, being a decrease of 78,695 on the previous year; with the exception of a few odd hundreds the whole of this traffic was handled at the Victoria Pier.

The record day numbers were: Largest arrivals, August 1st, 31,018½; largest departures, August 8th, 26,082; largest arrivals and departures, August 8th, 48,533½.

Hull and the Humber

First Quarter Statistics of Hull shew a Decrease.

THE docks at Hull, apart from extraordinary activity in the import trade in anticipation of the operation of the Government's import duties, have not been so busy on the whole, the first quarter of the year comparing adversely with the first quarter of 1931. Imports of wheat and kindred cereals totalled 273,398 tons, as against 313,177 tons, and those of oil seeds, nuts and kernels 152,363 tons, as against 183,538 tons, a combined decline of 70,000 tons of grain and seed. Imports of wood were at approximately the same level as in the first quarter of last year, but exports of coal showed a marked decrease. The total of the latter for Hull and the sister ports of the Humber was 884,645 tons, against 1,196,052 tons, a decline of 311,407 tons, equal to 26 per cent. A busier period, however, is at hand with the advent of the timber import season, facilities for which have been recently improved at the Victoria Dock by the filling in of a timber pond of 14 acres and the provision on the site of additional storage ground, railway sidings, etc. There are also signs of a slight improvement in the shipments of coal.

Attempt to Revise Towage Charges at Hull.

Following a reduction in stevedoring rates at Hull, efforts are now being made to secure a revision of towage charges. A movement is also on foot to reduce the pilotage rates for the Humber. With respect to the latter the shipowners' application has been under consideration by the Pilotage Committee of the Humber Conservancy Board, when a resolution was moved to promote a by-law to rescind the temporary increase of 5 per cent. granted in 1926 and 1927 to the Humber and Goole pilots, and to provide for an additional reduction of 5 per cent. in keeping with the recent decision of the National Maritime Board regarding the rates of pay of shipmasters and ships' officers. Action, however, has been deferred pending the preparation of a report showing the earnings of pilots, etc.

Advancing the Claims of Hull for New Industries.

With a view to attracting new industries to the port, the Hull Development Committee are making an intensive effort to advance the claims of Hull. Attractive pamphlets and illustrations have been prepared and sent abroad, and in these mention is made of the fact that for dock accommodation Hull is in the front rank of British ports. The docks, it is stated, cover a total water area of 210 acres, with some 600 acres of storage space, 12 miles of quays with 7 miles of river frontage. They are equipped with handling appliances of the most modern character and their facilities enable them to deal with the largest vessels in the carrying trades. There are also two deep water jetties for the importation of petroleum in bulk, and in connection with this extensive storage tanks and refining plant have been installed by the principal oil companies. Reference is also made to the fact that at the Hull Docks there is freedom from overside charges and that grain and seed discharged overside into lighters, convey the material to the mills on the banks of the River Hull and elsewhere without further handling. Councillor F. Till is the chairman of the Development Committee and the Town Clerk the honorary secretary.

Report on the Navigable Conditions of the Humber.

A comprehensive report on the navigable conditions of the Humber and the efforts made to maintain the depth of water in the docks and the approaches thereto has been presented to the Humber Conservancy Commissioners by their engineer (Mr. A. E. Butterfield). In this it is stated that the Humber above Hull has been exceptionally stable and the governing depth unusually good, but that the average width of the navigable channel leaves much to be desired. The river below Hull also has been very stable, being slightly above the average. The outstanding feature of the year is the continuance of the navigable channel on the Yorkshire side between Brough and Hessle. Regarding the River Ouse from Blacktoft and Burton Stather, the report states that the navigable channel between Blacktoft jetty and Faxfleet Ness is much better both in width and depth as concerns the one-fathom contour. For the first time since 1861 the two-fathom channel is continuous. Blacktoft sand has increased in average height some 18-in., the most noticeable increase being close to the new training wall, where it has increased from 8-ft. to 12-ft. above low water level. Concerning the confluence of the Ouse and Trent and the Humber to Hessle, Mr. Butterfield states that this area has been unusually stable, with a governing depth of 5-ft. This has been exceeded only once, viz., in 1909. The Ancholme channel is well maintained, and the Whitton middle sand, though occupying five-sixths of the river at its widest point, is 3,000-ft. shorter than last year. Whitton Ness sand has increased in height slightly, while the Brough and Redcliff middle sands are still united and occupy the major portion of the river between Brough and Hessle. Redcliff sand has decreased still further about 76 acres in area, having been washed away during the past twelve months. The edge is very precipitous, drying as much as 19-ft. within a few feet of low-water mark. Its area is now only 250 acres, whereas in 1923 the area was over 1,900 acres. Foul Holme sand has grown out about 800-ft. towards the Lincolnshire side, but the southern portion has decreased greatly in area, and is about 1,700-ft. further northward since last year.

Enormous quantities of material were dredged, the total deposited on the Skitter Ness ground during 1931 being no less than 5,252,735 tons. Of this, 5,190,735 tons were deposited by the London and North-Eastern Railway Company's dredger fleet and the remainder by Earle's Shipbuilding and Engineering Company. The King George Dock supplied 1,704,700 tons, the Alexandra Dock 845,310 tons, other Hull docks 2,339,085 tons, Salt End jetty 265,640 tons, and New Holland Dock 36,000 tons. Earle's Company's total was dredged from the foreshore in front of their shipyard. Last year's deposits were a large increase on 1930, when the total was 3,838,440 tons. The minimum quantity since 1899 was 1,703,279 tons deposited in 1914, and the maximum quantity 5,987,995 tons in 1927. The annual average over a number of years is 3,755,326 tons. Despite the deposit of over five-and-a-quarter million tons on the Skitter Ness ground, erosion occurred last year to the extent of 1,334,787 tons. Calculations of the cubical contents of the deposit ground made from the annual surveys since 1902 show that 116 million tons have been deposited to date. With regard to the Foul Holme deposit ground, the London and North-Eastern Railway Company's dredgers deposited there from Immingham last year 1,078,760 tons, and there has been an accretion of 1,151,150 tons. Whereas in 1930 there was a deposit of 689,080 tons, erosion occurred to the ground equivalent to over four million tons. Since 1907 about 18½ million tons have been deposited, and this shows an accretion from that date of 26,330,000 tons.

According to the returns of the London and North-Eastern Railway, the total material dealt with at Hull was 5,467,800 tons, some portion of this being used for filling in the old Queen's Dock. The total dredged at Immingham was 1,108,300 tons. Increased use has been made of suction dredgers, and pumping ashore operations are being carried out at King George Dock, Hull, where 18 acres of land are being reclaimed. The London and North-Eastern have purchased from a London firm the tug "Foremost 83" to replace the company's tug "Dauntless" at Hull. The newcomer will take its place in the L.N.E.R. docks fleet, which consists of bucket and suction dredgers, hopper and pontoon grabs, and steam and dumb hoppers.

The Bremen Ports

Decrease in Traffic during the Year 1931

Although traffic in the Bremen ports in the year 1931 continually decreased, it has been possible for the Bremer Lagerhaus-Gesellschaft to pay a certain amount of interest on the plant belonging to the State. From the profit of the business the State receives as renewal reserve Rm.181,537 (Rm.356,959 in 1930), as interest for the portion of working capital provided by it Rm.9,000 (Rm. 9,000 in 1930), and as interest for plant value Rm.423,228 (Rm.327,195 in 1930). The total amount that the Lagerhaus pays to the State is thus Rm.77,689 less than in the previous year, but it must be taken into consideration that the fees in harbour business have several times been reduced, and storing rents, in spite of the unfavourable position, have been reduced from January 1st, 1932.

The company itself receives Rm.31,184 (Rm.29,354 in 1930), or 5.11 per cent. (4.23 per cent.) of the sum that goes to the State. The profit and loss account shows a net profit of Rm.24,293 (Rm.20,659 in 1930), which is increased by the profit brought forward from the previous year to Rm.39,837 (Rm.42,583 in 1930). From this Rm.70 (Rm. 70 in 1930) per share are paid as dividend, i.e., altogether Rm.14,000.

In the report it is stated: "In the past business year traffic at the harbour plant in our care decreased continually. In quay business turnover decreased by 12.4 per cent.; in grain traffic imports sank by 19 per cent., storage business showed a decrease of 14.9 per cent. It was therefore difficult, in spite of shorter hours, several decreases in wages and salaries, etc., to maintain the working result as nearly as possible on the same level as that of the previous year. The plant capital of the institutions handed over to the company for administration amounted to Rm.28,365,572 on December 31st, 1931.

Notes from Far Eastern Ports

Colombo's Foreign Trade.

CEYLON'S imports and exports during March, 1932, through the Port of Colombo, show a rise on the figures for February, 1932, but they are well below the figures for March, 1930, and March, 1931. The value of imports during March was Rs.18,584,116, as compared with Rs.17,752,670 in February, while the export figures for these months were Rs.19,745,032 (March) and Rs.16,634,850 (February).

The following is a comparative statement of the value of imports and exports for the first quarter of the last three years:

	Imports	Exports
	Rs.	Rs.
Jan.-March, 1930	88,962,006	91,432,934
Jan.-March, 1931	61,460,326	67,829,246
Jan.-March, 1932	56,380,330	52,019,080

There has been a drop of about five lakhs in the net Customs revenue collected in the first quarter of this year as compared with the first quarter of last year, the actual figures being:—

	Rs.
Jan.-March, 1931	11,342,622.77
Jan.-March, 1932	10,833,619.11

The total import duties collected during the first quarter of this year actually show an increase on the first quarter of 1931, in view of the rise in the Customs duties. The only drop in import duty collections is registered under the head of " spirits and cordials," indicating that the increase of import duty has had the effect of " killing the goose which laid the golden egg."

The following is a comparative statement of the total collections of net Customs revenue for the first quarter of the last two years:—

	Jan.-Mar. 1931	Jan.-Mar. 1932
Cotton, manufactures ...	208,656.88	250,636.34
Grain	2,475,556.21	2,865,843.25
Kerosene, oil and motor spirits	1,298,707.49	1,442,880.97
Spirits and Cordials ...	586,463.26	463,378.73
Sugar	1,079,942.27	1,139,958.89
Other Goods	2,917,759.69	3,042,958.13
Total Import Duties ...	8,567,085.80	9,205,656.31

The collections from export duties show a rise of Rs.10,852.99 under the head of " cacao " in the first quarter of 1932, as compared with the first quarter of 1931.

Budget of Colombo Port.

The draft estimates of revenue and expenditure of the Colombo Port Commission for the next financial year, as recommended by the Sub-Committee of the Commission appointed for their consideration, were adopted at the last meeting of the Commission.

Port Commission Matters.

The following estimates (for the financial year 1931-1932), having been circulated to members, were laid on the table and approved:—

Deepening Colombo Harbour.—Harbour Engineer's revised estimate No. 5 for Rs.100,000 for deepening Colombo Harbour and rock excavation.

New Machinery.—Harbour Engineer's estimate No. 9 for Rs.12,000 for new machinery.

Installation of New Electric Mains in the Ceylon Wharfage Company Area.—Harbour Engineer's estimate No. 21 for Rs.2,000 for the installation of new electric mains in Ceylon Wharfage Company area.

Converting the Ground Floor of Customs Office Building to Accommodate Master Attendant's Court, etc.—Harbour Engineer's estimate No. 22 for Rs.4,250 for converting the ground floor of Customs Office building to accommodate the Master Attendant's Court.

Enclosing Colombo Port Commission Property at Kolonnawa.—Harbour Engineer's estimate for Rs.2,650 for completing the enclosure of Colombo Port Commission property at Kolonnawa.

Port Commission Personnel.

His Excellency the Governor has been pleased to reappoint the following to be unofficial members of the Colombo Port Commission for a further period of one year as from March 1st, 1932: Mr. M. J. Cary, Mr. W. Duncan, Mr. R. W. Fowke, Mr. T. Hunt, Mr. J. A. Tarbat and Mr. K. J. Witham-Wignall.

His Excellency has also been pleased to appoint Mr. I. X. Pereira to be an additional unofficial member of the Colombo Port Commission for a period of one year as from March 1st, 1932, to represent Ceylonese interests.

Port Trust for Colombo.

The Report of the Committee appointed to consider the desirability of establishing a Port Trust for Colombo, and to make recommendations towards the end of 1930 has been issued in the form of a Sessional Paper.

The recommendations put forward by the Committee in their Report are summarised by them as follows:—

(1) That it is undesirable that the port should be treated as a source from which funds should be derived for the benefit of the general revenue, and that, in the present position of the port, the obtaining of such funds is not practicable.

(2) That the port has, up to date, been a charge upon the general revenue, but that it is desirable that it should now be made self-supporting, and that the various port dues and charges should approximate as closely as possible to the cost of the services rendered.

(3) That for this purpose the finances of the port should be separated from the general finances of the island, and the administration of the port placed in the hands of an independent body representing the various interests affected and subject to the general control of Government.

(4) That with a slight increase or readjustment of some of the port dues and charges it is possible at the present time to place the port financially upon its own resources.

The Hon. Mr. D. S. Senanayake disagrees with the report and annexes the dissent, while Sir Henry de Mel has signed the Report subject to a rider.

The Committee consisted of the following members: Messrs. B. G. de Glanville, S. P. Hayley, M. J. Cary, Sir Henry de Mel, Messrs. A. Mahadeva, I. X. Pereira, E. G. Adamally, C. H. Z. Fernando, and the Hon. Messrs. H. M. Macan Markar, A. F. Molamure and D. S. Senanayake.

On the question of a Port Trust for Colombo, the " Times of Ceylon," the most popular and the European-owned newspaper, writes editorially:—

" The argument for the establishment of a Port Trust is not demolished by the clever dissent of the Hon. Mr. D. S. Senanayake, but, on the other hand, is strengthened. Stated briefly, Mr. Senanayake claims that the permanent inhabitants of the island indirectly pay a preponderating proportion of the cost of the port facilities and, in consequence, should have a preponderating voice, through the State Council, in the control of the administration of the port. It might with equal force be urged that, since the harbour facilities are ultimately paid for by the general public, the best interests of the public and of the country would be served by providing the most efficient form of control and administration. The political arguments should be discarded and the question should be considered purely from the point of view of efficiency. It may readily be admitted that the existing system has functioned successfully, the harbour being treated as a Government department under the charge of an official assisted by an Advisory Commission. We would submit, however, that the success achieved has been due to the fact that the Port Commission has virtually been treated as a Port Trust, and its recommendations on policy were regarded almost in the light of executive commands. In other words, there has been practically no political control of the Port Authority, which has been able to initiate and prosecute its own developmental programmes, with the added advantage of having the resources of the State behind it. What is wanted is to keep the administration of the port free from political whims, controversies and vicissitudes, and this can only be ensured if a Port Trust or similar organisation is created as an independent controlling authority. The desiderata, in the view of the Committee which has just reported, are separate finances, continuity of policy in the administration, and a controlling body with specialised knowledge of the requirements and working of the port. As regards finances, it has been established to the satisfaction of the Committee that the port has been a drain upon the public revenue, contrary to the impression which has been widely held. According to an appendix to the Report, a total debt of over seven million rupees is shown by the port to general revenue at the end of the financial year of 1928-29. It is reasonably certain that the port can no longer be regarded, from the Treasury point of view, as profit earning asset, and we are strongly of the opinion that in no circumstances should the port be treated as an instrument of taxation. There can therefore be no financial objection on Government's part to the withdrawal of the port from its manifold activities and to the establishment of a Port Trust. It is only right that the port should finance itself as regards maintenance, interest charges and the development of facilities. All these objects can be secured by the control of the port by an independent authority which would also inspire confidence as to the provision of cheap and ample facilities. Even if it were found necessary to increase

Notes from Far Eastern Ports—continued

the charges, shippers would be satisfied that the increase was justified, whereas any increase in rates on the part of the Government is strongly resisted. The case for a Port Trust may be summed up in the words of the Chairman of the Port Commission in his Report to Government two years ago. It is undesirable, he stated, that the port should be treated as a source from which funds should be derived for the benefit of the general revenue and, in the present position of the port, the obtaining of such funds is not practicable. The port has, up to date, been a charge upon the general revenue, but it is desirable that it should now be made self-supporting, and that the various port dues and charges should approximate as closely as possible to the cost of the services rendered. For this purpose he recommended that the finances of the port should be separated from the general finances of the island, and the administration of the port placed in the hands of an independent body representing the various interests affected, and subject to the general control of the Government."

Port of Southampton Topics

Revival in Shipping Activity at Southampton.

APRIL has witnessed a welcome increase in activity in Dockland at Southampton, for many of the shipping companies' summer services have had a beginning. Some of the large ships which have been cruising have returned, and the main services from Southampton to the United States and Canada have been re-established on a full schedule.

Throughout the autumn and winter the big companies reduced their sailings to a minimum, and in the case of the Holland-America Line there was a suspension of activities on the mail and passenger run.

The sailing for New York of the "Mauretania" on April 6th was the last Wednesday departure of the Cunard express ship for the season. During the winter the Cunard sailings have been maintained in conjunction with the White Star Line's ships every Wednesday, giving an express British service every week to New York.

April saw the re-establishment of the two services—the White Star departures being made every Wednesday and the Cunard ships sailing each Saturday. The "Majestic" sailing on the 13th and the "Aquitania" on the 16th started the summer services.

The Canadian Pacific Line also increased their activities during the month, the most notable events being the restarting of the service from Southampton to Quebec by the "Empress of Australia" on the 16th and the re-opening of the intermediate service to Montreal on the 30th.

The North German Lloyd have again the services of the "Columbus" on the New York run, sailing in conjunction with the "Europa" and the "Bremen." The "Berlin" and the "General von Streuben" are conducting the intermediate service.

The White Star Line have been appointed agents for the handling of the vessels of the United States Lines at Southampton, and their duties began with the westbound call of the "President Roosevelt" from Hamburg to New York this month.

The White Star Line's organisation will handle the flagship "Leviathan" when she calls in Cowes Roads to embark passengers on her voyages to New York this summer. Bremen has been substituted for Southampton as the European terminal and Plymouth will be the vessel's British port of call on all her eastbound voyages.

Counteracting this change comes the announcement that as from the departure of the "Pennland" from New York on April 22nd all Red Star liners will call at Southampton eastbound instead of at Plymouth, their itinerary being New York, Southampton, Havre and Antwerp. The liners have always used Southampton on their westbound trips.

Dock Statistics for March show Decreases on 1931 Figures.

Southampton Dock statistics for March again show decreases compared with the figures for a year ago, but they are better than the returns for February. Under every heading except one—that of inward cargo—the March figures are higher than those for February, and that exception, of course, is accounted for by the rush which preceded the new import duties coming into operation on March 1st.

Compared with March, 1931, which is the proper basis of comparison, the number of vessels inward decreased from 253 to 237, and outward from 254 to 247. The inward gross tonnage slumped from 1,200,161 to 987,354, a loss of 212,807 tons, whilst outward the total declined from 1,210,755 to 1,028,121, a drop of 182,634 tons.

The net tonnage returns were very similar, the inward aggregate being 122,994 tons in arrears, and the outward 93,976 tons down. The totals were 531,509 tons inward, as compared with 654,503 tons in March last year, and 550,827 tons outward, as compared with 644,803 tons.

The volume of cargo handled dropped by over 20,000 tons, for the figure inward slipped back 17,007 tons and outward 4,165 tons. The total inward was 36,812 tons.

The passenger returns were a little more gratifying, for although there was a drop of 2,188 in the total inward—the figures being 9,688 against 11,876—there was an increase of 1,120 outward, the total rising from 9,080 to 10,200. Troops inward numbered 1,706 as compared with none during the corresponding month of 1931, and outward there was a balance of 270, the number handled being 1,503 as against 1,233 in March last year.

Big Development in Fruit Trade at Southampton.

Remarkable developments have taken place in recent years in the fruit trade at Southampton, and as a receiving and distributing port its activities have now become very great. There are few parts of the world from which fruit of one sort or another does not reach the port, but it is in the South African fruit trade that the expansion has been most marked.

Each week during the season the Union Castle vessels discharge great quantities of Cape fruit. April marks the peak of the deciduous season and during the past three months no fewer than a million-and-a-quarter boxes of fruit have been unloaded here from Union Castle boats. By the end of the season it is estimated that at least two-and-a-half million boxes of fruit will have been handled at the port.

The Port of London Authority

London's Shipping.

During the week ended April 8th, 709 vessels, representing 844,023 net registered tons, used the Port of London; 357 vessels (664,754 net registered tons) were to and from Colonial and foreign ports and 352 vessels (179,269 net registered tons) were engaged in coastwise traffic.

* * * *

During the week ended April 15th, 1,071 vessels, representing 910,200 net register tons, used the Port of London; 407 vessels (715,715 net registered tons) were to and from Colonial and foreign ports, and 664 vessels (194,485 net registered tons) were engaged in coastwise traffic.

* * * *

During the week ended April 22nd, 1,230 vessels, representing 875,226 net register tons, used the Port of London; 435 vessels (682,413 net register tons) were to and from Colonial and Foreign ports and 795 vessels (192,813 net register tons) were engaged in coastwise traffic.

Port of London Passenger Traffic.

Inward bound vessels belonging to the New Zealand Shipping Company which have hitherto called at Southampton will in future proceed direct to London and disembark passengers at the Tilbury landing stage.

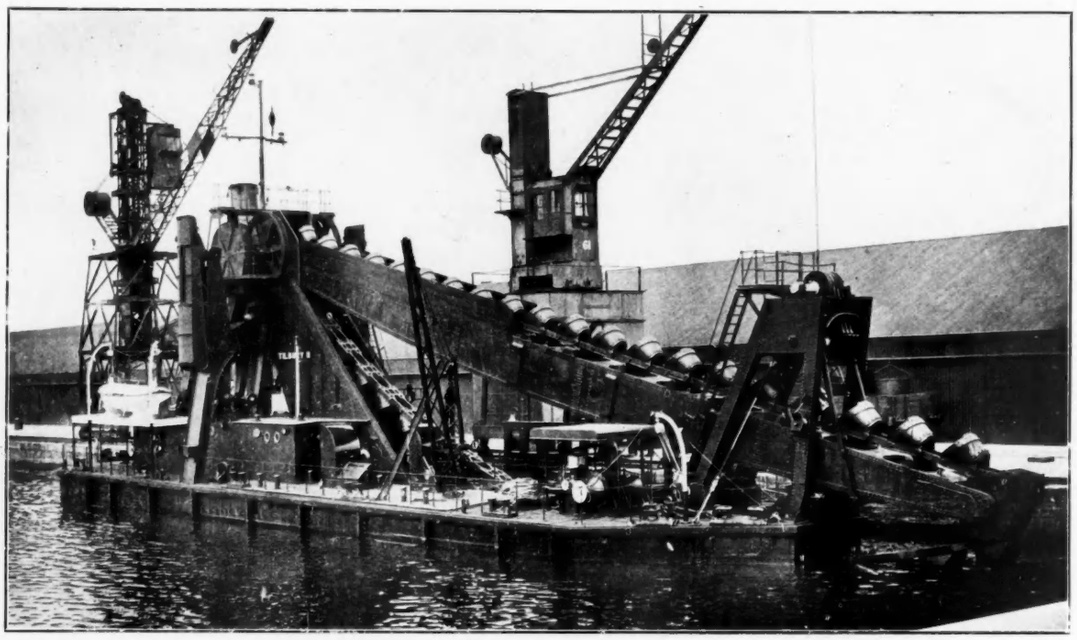
Tilbury Passenger Landing Stage.

Twenty-three vessels totalling 169,623 gross registered tons used the Tilbury passenger landing stage during the month of March. Altogether 2,535 passengers were embarked or disembarked at the stage, in addition to baggage and mails.

Quick Despatch on the Tyne.

An instance of rapid despatch is reported from the Tyne. The "Altuna Mendi" arrived at the Commissioners' staiths on the evening of Good Friday, commenced bunkering 6 a.m. the following morning, and completed by 6 p.m. the same day. Nearly 2,000 tons of bunkers were taken on board, and the vessel sailed immediately for South America.

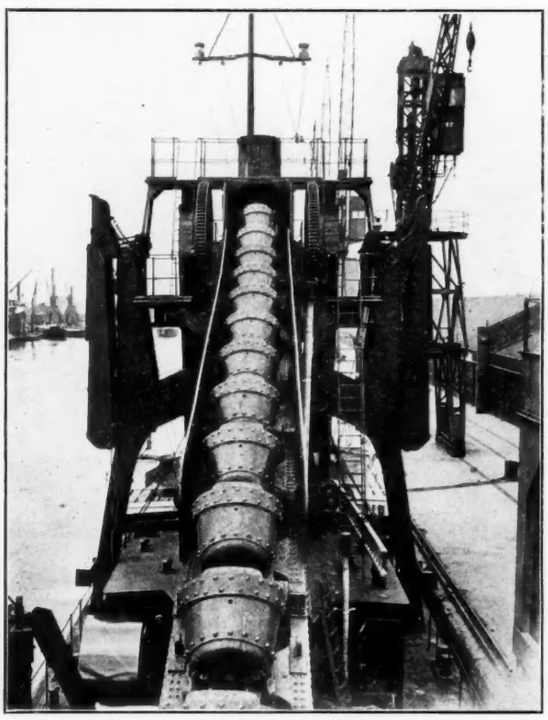
New Dredger for the Port of London Authority



Full View of the Dredger.

MESSRS. FERGUSON BROTHERS (PORT GLASGOW), LIMITED, have recently completed successful dredging trials in Tilbury Docks of the new non-propelling bucket dredger "Tilbury II.", constructed by them for the Port of London Authority.

The dredger, which is 133-ft. 6-in. long overall by 27-ft. beam and 9-ft. 6-in. moulded depth, has been built for work in the Authority's docks and on the river. The vessel has a cut-away deck line at the forward end to enable her to dredge close up to quay walls. The hull is cut away at the stern to reduce resistance when towing.



View looking up Bucket Ladder.

Bow View showing Buckets.

A continuous elm belting is fitted at the deck level and another elm belting is placed below this for a length of 100-ft. on either side. These beltings are connected at 11-ft. intervals by vertical elm fenders, so as to amply protect the shell when against quay walls or when barges are alongside.

The height of the main framing is such that the discharge shoots are convenient for loading various sizes of hopper barges. The rivetting of the main framing legs and struts, also the forward framing and the bucket ladder, is by hydraulic pressure as in the highest class of girder work.

The buckets are of 7½ cubic feet capacity and have manganese steel cutting lips and cast steel backs. The buckets are also hydraulically rivetted. The bucket chain is connected by manganese steel pins and the ladder rollers are of special metal and have long bearing surfaces on the spindles. The hoisting and lowering of the bucket ladder is performed by an engine and winch of substantial design with large thrust surfaces. The hoisting winch worm wheel runs in an oil trough and has a phosphor bronze toothed rim.

The top tumbler is of manganese steel and the lower tumbler has a sand-excluding device supplied with special grease lubricant from a pump operated from deck. The drive to the top tumbler is by triplex substance belts and heavy pulleys; then by cast steel pinions and spur wheels. All the

New Dredger for the Port of London Authority—continued

bearings in the main engines and auxiliaries, and the heavy gear bearings, are of phosphor bronze. The driving belts are totally enclosed, above deck, in steel casings with observation doors.

The main engines are of the compound condensing type, 140 lbs. working pressure and placed athwartships, steam being supplied by one marine return tube boiler.

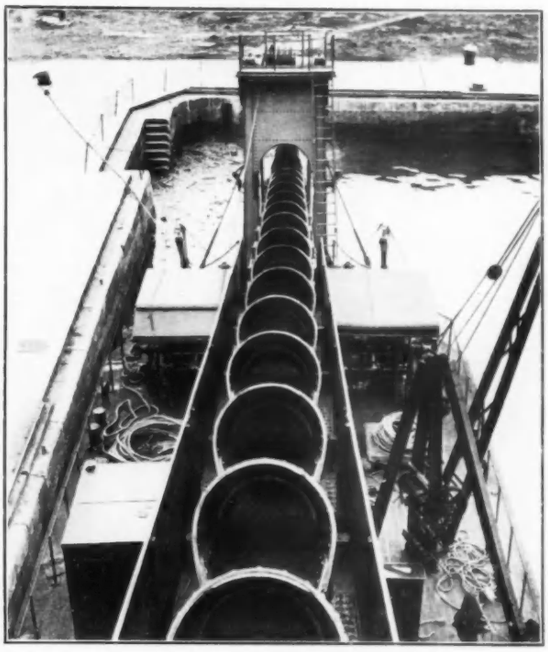
The engine room is complete with auxiliaries, including feed heater, independent air, circulating and bilge pumps, and Weir's feed pumps. There are condenser circulating water inlets on each side of the hull, so that when a barge is loading alongside, the far side inlet may be used to assist in keeping the condenser free from muddy deposits. The shoots are washed out by a horizontal duplex pump also situated in engine room. The whole vessel is lit by electric light and deck standards are provided for night work.

Three powerful mooring winches are placed on deck, these winches having cast steel wheels and clutches.

Well-fitted accommodation is provided for four officers in separate rooms below deck on starboard side with a separate mess room and the crew's accommodation is on the port side, where there is comfortable accommodation for eight men. A chart room or superintendent's room is situated on deck on the starboard side and a dredging control house on port side, this house containing all the controls for the ladder hoisting machinery and the telegraphs to the main engine room and mooring winches.

The dredger is Classed to Lloyd's Survey 100 A.1.

On the trials the specified output of 250 cubic yards of material per hour from a depth of 45-ft. was considerably exceeded, 354 cubic yards being actually dredged in that time.



View looking down Bucket Ladder.

Aden Port Trust.

The following are the returns of shipping using the port for the month of January, 1932:—

	No.	Tonnage
Merchant Vessels over 200 tons ...	136	574,633
,, ,, under 200 tons ...	4	488
Government Vessels	15	24,109
Dhows	114	4,402
PERIM.		
Merchant Vessels over 200 tons ...	16	45,753

The total value of imports was Rs.58,07,000, as compared with Rs.54,25,000 for January, 1931, and of exports Rs.37,12,000, as compared with Rs.35,72,000.

The total value of both imports and exports together was Rs.95,19,000, as compared with Rs.89,97,000 for the corresponding month last year.

Imports during the month were above those for January, 1931, in the case of gums and resins, sugar, piece goods (grey and printed or dyed), and treasure (private); and below in the case of coffee, grain, pulse and flour, hardware, hides (raw), seeds, skins (raw), piece goods (white), twist and yarn, tobacco (unmanufactured and manufactured).

Exports were above those for January, 1931, in the case of grain, pulse and flour, hardware, seeds, skins (raw), sugar, piece goods (grey and printed or dyed), tobacco (unmanufactured) and treasure (private); and below in the case of coffee, gums and resins, hides (raw), piece goods (white), twist and yarn and tobacco (manufactured).

TRADE OF THE PORT.

Article.	Unit.	Imports.		Exports.	
		Quantity.	Value Rs.	Quantity.	Value Rs.
Coal	Tons	8,241	1,58,320	0	0
Coffee	Cwts.	7,168	2,52,543	6,867	3,02,121
Grain, Pulse and Flour	,,	59,105	3,39,718	36,012	1,92,956
Gums and Resins	,,	5,203	74,277	3,759	70,564
Hardware	—	0	13,408	0	26,880
Hides, raw	No.	3,702	7,640	6,585	13,199
Oil, Fuel	Tons	47,373	14,21,190	0	0
,, Kerosene	Gls.	2,936	2,129	4,700	3,460
,, Petrol	,,	61,654	78,323	680	850
Salt	Tons	0	0	34,252	3,96,784
Seeds	Cwts.	2,705	26,644	1,887	20,101
Skins, raw	No.	230,130	1,42,456	269,370	2,46,904
Sugar	Cwts.	23,412	1,53,376	20,350	1,37,326
Textiles—					
Piece Goods, Grey	Yds.	6,153,704	10,09,521	5,166,643	8,38,781
,, ,, White	,,	524,135	1,09,362	306,070	65,574
,, ,, Printed or Dyed ...	,,	985,675	2,37,444	1,275,264	3,25,202
Twist and Yarn	Lbs.	427,664	2,05,820	229,050	1,26,159
Tobacco, Unmanufactured	,,	520,856	98,090	554,176	89,700
,, Manufactured	,,	23,744	23,688	21,952	16,667
Other Articles	No. of Pkges.	77,052	11,00,522	28,732	4,78,450
Treasure, Private	—	0	3,52,248	0	3,60,255
Total ...	—	—	58,06,719	—	37,11,933

The number of merchant vessels over 200 tons that used the port in January, 1932, was 136, as compared with 111 in the corresponding month last year, and the total tonnage was 575,000, as compared with 424,000.

Excluding coal, salt, fuel oil and military and naval stores and transhipment cargo, the total tonnage of imports in the month was 10,800, and of exports 6,800, as compared with 10,900 and 6,900 respectively for the corresponding month last year.

The total value of imports excluding Government stores was

Jugoslavian and Near Eastern Port Matters.

SUPPLEMENTING previous information regarding the inauguration of the Free Zone in the Port of Pireaus, it is now stated that the five new concrete warehouses, which have been built there by the French concern, G. Hersent, have been included in this zone. The Free Zone of the Port of Pireaus includes an area of about two square kilometres, on which are built the above-mentioned warehouses, having an area of about 100,000 square metres served by 17 cranes of two tons and 4 cranes of five tons. There will also be two electric coal elevators having a capacity of 50 tons hourly, and a grain silo having a total capacity of 20,000 tons with an unloading speed of 300 tons per hour. According to the view of Mr. Solonakis, the general manager of the Free Zone of the Port of Pireaus, the advantages offered by the zone can be summarised as follows: (1) the possibility to rent free zone warehouses to private firms to attract transit trade between Western and Eastern Europe and between Central Europe and Egypt; (2) warehousing charges will be greatly reduced in order to make the Port of Pireaus the cheapest port in the Mediterranean; (3) the free zone service is fully independent of the Pireaus Customs Administration; (4) free supply of everything required by steamers loading at the free zone quays will be granted; (5) the unloading and loading charges are to be still reduced, and there is no danger of thefts, etc. The success of the free zone régime will very much depend upon the level of the charges and dues which have not been established as yet. According to latest advices from Pireaus, it appears that the Greek Government has decided to undertake the reconstruction of the southern part of the port from the Pireaus-Salonika railway station along the present passenger landing stage up to the old Customs Pier. For this purpose the projects which have been submitted by Comm. Prof. Coen Cagli, the managing director of the Porto Industriale di Venezia, who is acting as harbour engineering adviser to the Greek Government, have been taken into consideration. It would appear that the construction of the new piers is to be started as soon as it is possible to secure a foreign loan for Greece.

The Administration of the Greek Free Zone at Salonika has published figures for shipping during 1931. Compared with 1930 they are as follows:—

	1931		1930	
	No.	N. R. T.	No.	N. R. T.
Greek	1,010	497,972	994	509,058
Italian	188	319,670	208	372,897
British	105	199,815	129	240,451
German	52	82,036	58	95,331
American	50	165,541	61	190,298
Dutch	40	59,068	37	51,714
Jugoslav	39	50,899	27	26,585
Norwegian	29	38,679	21	27,670
Russian	23	49,795	26	30,248
Swedish	16	23,127	17	17,972
Roumanian	10	8,412	12	4,200
Turkish	6	3,799	9	8,142
French	5	1,508	12	39,780
Bulgarian	3	1,685	—	—
Danish	2	2,080	—	—
Japanese	2	8,427	—	—
Belgian	2	6,721	—	—
Egyptian	2	4,417	2	1,805
Polish	2	734	—	—
	1,586	1,524,385	1,613	1,616,151

According to information secured from an official source, it appears that the free zone administration has taken the necessary steps to have as many ships as possible loading and unloading alongside the quay without the use of lighters, so that it has been possible to cut down expenses in the use of this port. Of course, it is pointed out, when there are many ships arriving at once in the port it is still necessary to have them unloading stern to quay with the use of lighters, but this has happened very seldom during 1931 and the early part of 1932. However, it can be added that the Greek Government, after having taken into consideration the project regarding the enlargement of the Port of Salonika, which had been submitted by the Société G. Hersent, has now asked this French concern to slightly alter the project. As soon as the alterations are made the Greek Ministry for Public Works, it is stated, will invite tenders for the carrying out of the project for which the Greek Free Zone Administration should raise a loan.

Turning to the question of shipping, the above-mentioned figures show a decline in the Free Zone tonnage. With the exception of the Roumanian, Russian, Swedish, Norwegian, Dutch and Jugoslav flags, all the other foreign flags have shown a loss in tonnage at the Port of Salonika. According to statistics, it appears that goods imported in the Free Zone during 1931 included 443,299 tons against 487,747 tons during 1930, 587,578 tons in 1929 and 483,370 tons in 1928, while goods exported included 31,120 tons in 1931, 87,819 tons in 1930, 103,191 tons in 1929, and 85,600 tons in 1928. Among the goods imported and exported there were the following items:

IMPORTS

	1931	1930	1929	1928
Wheat	131,915	109,899	108,292	95,895
Iron, etc.	23,248	28,341	36,361	39,730
Sugar	18,343	16,368	17,066	20,975
Coal	100,678	107,608	108,529	87,259

EXPORTS

	1931	1930	1929	1928
Wheat	3,426	8,351	12,935	8,436
Iron, etc.	2,628	4,348	11,706	9,660
Sugar	1,886	5,472	4,389	4,569
Coal	382	6,226	5,911	2,316

Wheat and coal still represent about 50 per cent. of the total imports into the free zone, and while wheat has shown an increase the imports of coal have shown only a small decline. The depression is much more noticeable in the imports of sugar, iron, articles in iron, machinery, etc. This fact shows that the depression of shipping at Salonika is due more to the economic crisis of the country rather than to hindrances to trade existing in the port itself, and there is no doubt that as soon as the purchasing power of Greece again becomes normal that shipping at Salonika will regain its importance.

The Jugoslav Government has taken into consideration the project which has been submitted to them in connection with the construction of a new port at Kotor and the construction of new railways between this district and the old Serbian provinces to meet the requirements of trade there. The construction of this port would be financed by a French group which would supply the necessary capital for the purpose, in the form of appropriate building materials, electric cranes, etc. It appears that there is also included in this scheme the construction of a dry dock suitable for overhauling ships of 10,000 tons.

In connection with the works which are now in progress in the Port of Durazzo, and which are to be completed during 1933, the large pier 500 metres long is to have a depth of 10 metres alongside so as to enable large ships to call. Two sheds are to be built on the pier. The whole port is to be connected with the Durazzo-Tirana Railway (34 Km. in length), the construction of which has made considerable progress. It would appear that some Italian groups are considering transforming the Bay of Santi Quaranta into a port.

According to statistics which have been supplied by the Chamber of Commerce and Industry at Smyrna, shipping during 1931 included the calling of 1,300 steamers representing 1,752,600 net tons, against 2,929 steamers and 1,982,367 net tons in 1930.

The question of increasing the harbour facilities at Adana, Antalia and Mersina, on the Southern coast of Asia Minor has again been taken up by the Turkish Government, and Dutch and German Harbour engineering advisers have been invited to Ankara to discuss the question with the Turkish Ministry for Public Works. The fact that the exports of cotton from Cilicia is increasing through these ports has caused the Chamber of Commerce and Industry at Mersina to urge steps to be taken. The possibility of building a pipe-line from the Caucasus to Mersina to convey Russian oil direct to that Mediterranean port is being considered.

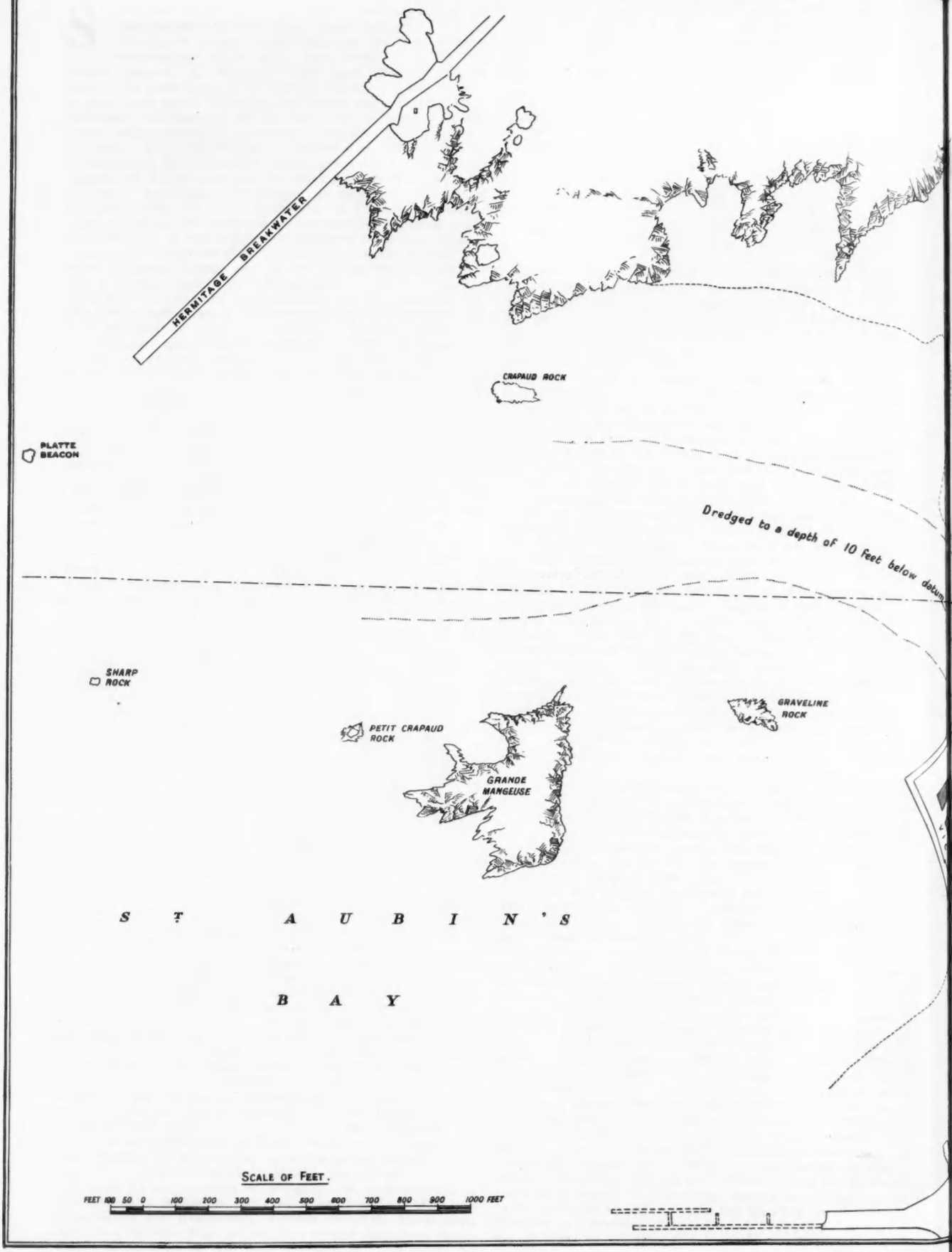
The harbour enlargements at Beyrouth are in progress and steps are being taken to undertake, as soon as possible, extensive dredging works in order to enable large ships to enter that harbour. It would appear that the Chamber of Commerce and Industry are considering building some new electric cranes.

Figues for shipping through Istambul have just been published, and included in 1931 the calling of 19,198,346 tons, against 17,864,755 tons in 1930, 12,767,012 tons in 1929, and 9,218,371 tons in 1928. This progress is due chiefly to the larger crossings which have taken place, in consequence of the increase of exports from the Russian Black Sea ports. Among the foreign countries which have contributed to this trade, Italy comes first, followed by Great Britain, Greece, Norway, etc. In consequence of representations which have been made, the Turkish Government has agreed to cut down the salvage charges collected from ships crossing the Dardanelles and the Bosphorus, and it would appear that the salvage facilities are to be increased. In the course of a meeting which has been held at the Istambul Chamber of Commerce the question of facilitating coal bunkering of ships at Istambul has been discussed, in view of the great competition of the facilities offered by the Société d'Heraclée at their bunkering port at Zunguldak.

Dock & Harbour Authority
June 1932.

ST HELIER'S, JERSEY (CHANN

UNDER THE JURISDICTION OF THE STATES OF THE ISLAND OF JERSEY.



WARD & FOXLOW LTD. (LITHO

ARBOUR AUTHORITY, JUNE, 1932.

NNEL ISLES).

ERSEY.

KEY MAP.

Scale of Miles.

MILES 10 0 10 20 30 40 50 MILES

ENGLISH CHANNEL

CHANNEL ISLES

Southampton 118 Miles

45 miles

ALDERNEY

CHERBOURG

GUERNSEY

St Pierre

SARK

Barneville

30 miles

JERSEY

ST HELIER'S

Alderney B.

37 miles

Granville

St MALO

ST BRIEUC

FRANCE

ALBERT PIER

30T Crane

Dredged to depth of 8 ft. 6 ins. below datum.

HARBOUR OFFICE

NORTH PIER

Weigh Bridge

Dredged to a depth of 10 feet below datum.

OLD SOUTH PIER

FRENCH HARBOUR

OLD QUAY

ENGLISH HARBOUR

NOTE;- Improvements are shewn in Red.

W LTD. (LITHO) HARCOURT STREET, W.1.